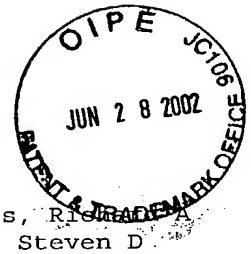

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Ellerman, Karen
Zerhusen, Bryan D
Patturajan, Meera
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Gusev, Vladimir Y
Burgess, Catherine E
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Gangolli, Esha A
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Gerlach, Valerie

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Pro Arg Ala Pro Pro Leu Ser Pro Gly Pro Gly Gly Cys Phe Glu Gly
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Gly Ala Gly Asn Cys Ser Ser Arg Gly Gly Arg Ala Ser Asp His Pro
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Gly Gly Gly Arg Glu Phe Phe Phe Asp Arg His Pro Gly Val Phe Ala
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Gly Asp Pro Gly Asp Asp Glu Asp Leu Ala Ala Lys Arg Leu Gly Ile
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Ser Arg Ala Ala Arg Phe Ile Ala Phe Ala Ser Leu Phe Phe Ile Leu
225                 230                 235                 240

Val Ser Ile Thr Thr Phe Cys Leu Glu Thr His Glu Ala Phe Asn Ile
                245                 250                 255

Val Lys Asn Lys Thr Glu Pro Val Ile Asn Gly Thr Ser Val Val Leu
            260                 265                 270

Gln Tyr Glu Ile Glu Thr Asp Pro Ala Leu Thr Tyr Val Glu Gly Val
        275                 280                 285

Cys Val Val Trp Phe Thr Phe Glu Phe Leu Val Arg Ile Val Phe Ser
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Ser Lys Ala Ala Lys Asp Val Leu Gly Phe Leu Arg Val Val Arg Phe
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Val Arg Ile Leu Arg Ile Phe Lys Leu Thr Arg His Phe Val Gly Leu
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Tyr Tyr Ala Glu Arg Val Gly Ala Gln Pro Asn Asp Pro Ser Ala Ser
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Ser Thr Gly Ser Glu Pro Pro Leu Ser Pro Pro Glu Arg Leu Pro Ile
545                 550                 555                 560

Arg Arg Ser Ser Thr Arg Asp Lys Asn Arg Arg Gly Glu Thr Cys Phe
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Leu Leu Thr Thr Gly Asp Tyr Thr Cys Ala Ser Asp Gly Gly Ile Arg
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Lys Gly Tyr Glu Lys Ser Arg Ser Leu Asn Asn Ile Ala Gly Leu Ala
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50 55 60

Leu Asn Leu Ser Leu Ala Asp Leu Ser Leu Leu Leu Phe Ser Ala Pro
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Phe Phe Ser Thr Ile Arg His His Glu Gly Val Glu Met Cys Leu Val
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Asp Val Pro Ala Val Ala Glu Glu Phe Met Ser Met Phe Gly Lys Leu
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Asn Leu Arg Asn Gln Ile Arg Ser Lys Gln Val Thr Val Met Leu Leu
225                 230                 235                 240

Ser Ile Ala Ile Ile Ser Ala Leu Leu Trp Leu Pro Glu Trp Val Ala
                245                 250                 255

Trp Leu Trp Val Trp His Leu Lys Ala Ala Gly Pro Ala Pro Pro Gln
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Gly Phe Ile Ala Leu Ser Gln Val Leu Met Phe Ser Ile Ser Ser Ala
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Lys Gly Val Trp Lys Trp Met Ile Thr Lys Lys Pro Pro Thr Val Ser
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Glu Ser Gln Glu Thr Pro Ala Gly Asn Ser Glu Gly Leu Pro Asp Lys
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Val Pro Ser Pro Glu Ser Pro Ala Ser Ile Pro Glu Lys Glu Lys Pro
            340                 345                 350

Ser Ser Pro Ser Ser Gly Lys Gly Lys Thr Glu Lys Ala Glu Ile Pro
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Pro Gly Asn Ala Val Val Ile Ser Thr Tyr Ile Phe Lys Met Arg Pro
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Ile Phe Arg Tyr Cys Val Ile Ile His Pro Met Ser Cys Phe Ser Ile
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His Lys Thr Arg Cys Ala Val Val Ala Cys Ala Val Val Trp Ile Ile
145                 150                 155                 160

Ser Leu Val Ala Val Ile Pro Met Thr Phe Leu Ile Thr Ser Thr Asn
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Arg Thr Asn Arg Ser Ala Cys Leu Asp Leu Thr Ser Ser Asp Glu Leu
            180                 185                 190

Asn Thr Ile Lys Trp Tyr Asn Leu Ile Leu Thr Ala Thr Thr Phe Cys
        195                 200                 205

Leu Pro Leu Val Ile Val Thr Leu Cys Tyr Thr Thr Ile Ile His Thr
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Asp Ala Trp Lys Tyr Asn Gly Asp Ile Glu Asp Ile Lys Arg Thr Pro
     50                  55                  60

Asn Asn Val Val Ser Thr Pro Ala Pro Ser Pro Asp Ala Ser Gln Leu
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Ala Ser Ser Leu Ser Ser Gln Lys Glu Val Ala Ala Thr Glu Glu Asp
                 85                  90                  95

Val Thr Arg Leu Pro Ser Pro Thr Ser Pro Phe Ser Ser Leu Ser Gln
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Asp Gln Ala Ala Thr Ser Lys Ala Thr Leu Ser Ser Thr Ser Gly Leu
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cagcaacaga agaagatgtg acaaggctgc cctctcctac atccccttc tcatctcttt 660
cccaagacca ggctgccact tctaaagcca cattgtcttc cacatctggt cttgatttaa 720
tgtctgaatc tggagaaggg gaaatctccc cacaaagaga agtctcaaga tcccaggatc 780
agttcagtga tatgagaatc agcataaacc agacgcctgg gaagagtctt gactttgggt 840
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<210> 10
<211> 451
<212> PRT
<213> Homo sapiens

<400> 10

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Met Leu Gln Asp Arg Glu Ser Gln Asn Gln Lys Ser Thr Val Pro Ser
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Arg Arg Arg Met Tyr Ser Phe Asp Asp Val Leu Glu Glu Gly Lys Arg
             20                  25                  30

Pro Pro Thr Met Thr Val Ser Glu Ala Ser Tyr Gln Ser Glu Arg Val
         35                  40                  45

Glu Glu Lys Gly Ala Thr Tyr Pro Ser Glu Ile Pro Lys Glu Asp Ser
     50                  55                  60

Thr Thr Phe Ala Lys Arg Glu Asp Arg Val Thr Thr Glu Ile Gln Leu
 65                  70                  75                  80

Pro Ser Gln Ser Pro Val Glu Glu Gln Ser Pro Ala Ser Leu Ser Ser
                 85                  90                  95

Leu Arg Ser Arg Ser Thr Gln Met Glu Ser Thr Arg Val Ser Ala Ser
            100                 105                 110

Leu Pro Arg Ser Tyr Arg Lys Thr Asp Thr Val Arg Leu Thr Ser Val
        115                 120                 125

Val Thr Pro Arg Pro Phe Gly Ser Gln Thr Arg Gly Ile Ser Ser Leu
    130                 135                 140

Pro Arg Ser Tyr Thr Met Asp Asp Ala Trp Lys Tyr Asn Gly Asp Val
145                 150                 155                 160

Glu Asp Ile Lys Arg Thr Pro Asn Asn Val Val Ser Thr Pro Ala Pro
                165                 170                 175
```

```
Ser Pro Asp Ala Ser Gln Leu Ala Ser Ser Leu Ser Ser Gln Lys Glu
            180                 185                 190

Val Ala Ala Thr Glu Glu Asp Val Thr Arg Leu Pro Ser Pro Thr Ser
        195                 200                 205

Pro Phe Ser Ser Leu Ser Gln Asp Gln Ala Ala Thr Ser Lys Ala Thr
    210                 215                 220

Leu Ser Ser Thr Ser Gly Leu Asp Leu Met Ser Glu Ser Gly Glu Gly
225                 230                 235                 240

Glu Ile Ser Pro Gln Arg Glu Val Ser Arg Ser Gln Asp Gln Phe Ser
                245                 250                 255

Asp Met Arg Ile Ser Ile Asn Gln Thr Pro Gly Lys Ser Leu Asp Phe
            260                 265                 270

Gly Phe Thr Ile Lys Trp Asp Ile Pro Gly Ile Phe Val Ala Ser Val
        275                 280                 285

Glu Ala Gly Ser Pro Ala Glu Phe Ser Gln Leu Gln Val Asp Asp Glu
    290                 295                 300

Ile Ile Ala Ile Asn Asn Thr Lys Phe Ser Tyr Asn Asp Ser Lys Glu
305                 310                 315                 320

Trp Glu Glu Ala Met Ala Lys Ala Gln Glu Thr Gly His Leu Val Met
                325                 330                 335

Asp Val Arg Arg Tyr Gly Lys Ala Asp Trp Gly Lys Asp Gln Pro Ser
            340                 345                 350

Leu Pro Phe Ile Arg His Lys Thr Leu Asn Leu Thr Ser Met Ala Thr
        355                 360                 365

Lys Ile Ile Gly Ser Pro Glu Thr Lys Trp Ile Asp Ala Thr Ser Gly
    370                 375                 380

Ile Tyr Asn Ser Glu Lys Ser Ser Asn Leu Ser Val Thr Thr Asp Phe
385                 390                 395                 400

Ser Glu Ser Leu Arg Ser Ser Asn Ile Glu Ser Lys Glu Ile Asn Gly
                405                 410                 415

Ile His Asp Glu Ser Asn Ala Phe Asp Ser Lys Ala Ser Glu Ser Ile
            420                 425                 430

Ser Leu Lys Asn Leu Lys Arg Arg Ser Gln Phe Phe Glu Gln Gly Lys
        435                 440                 445

Pro Gln Ser
    450
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<210> 11

<211> 1882
<212> DNA
<213> Homo sapiens

<400> 11
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gttatgctgg aaaaacctgt aatcaagatc taaatgagtg tggcctgaag ccccggccct 540
gtaagcacag gtgcatgaac acttacggca gctacaagtg ctactgtctc aacggatata 600
tgctcatgcc ggatggttcc tgctcaagtg ccctgacctg ctccatggca aactgtcagt 660
atggctgtga tgttgttaaa ggacaaatac ggtgccagtg cccatcccct ggcctgcagc 720
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gccctagatt taggcaatgt gtcaacactt ttgggagcta catctgcaag tgtcataaag 840
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acacaggaaa taataattgg attcctgatg ttggaagtac ttggtggcct ccgaagacac 1140
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agaactaaca atgaactcct aa 1882

<210> 12
<211> 536
<212> PRT
<213> Homo sapiens

<400> 12
Met Asp Phe Leu Leu Ala Leu Val Leu Val Ser Ser Leu Tyr Leu Gln
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Ala Ala Ala Glu Phe Asp Gly Arg Trp Pro Arg Gln Ile Val Ser Ser
20 25 30

Ile Gly Leu Cys Arg Tyr Gly Gly Arg Ile Asp Cys Cys Trp Gly Trp
35 40 45

Ala Arg Gln Ser Trp Gly Gln Cys Gln Pro Val Cys Gln Pro Arg Cys
50 55 60

```
Lys His Gly Glu Cys Ile Gly Pro Asn Lys Cys Lys Cys His Pro Gly
 65                  70                  75                  80

Tyr Ala Gly Lys Thr Cys Asn Gln Asp Leu Asn Glu Cys Gly Leu Lys
                85                  90                  95

Pro Arg Pro Cys Lys His Arg Cys Met Asn Thr Tyr Gly Ser Tyr Lys
            100                 105                 110

Cys Tyr Cys Leu Asn Gly Tyr Met Leu Met Pro Asp Gly Ser Cys Ser
        115                 120                 125

Ser Ala Leu Thr Cys Ser Met Ala Asn Cys Gln Tyr Gly Cys Asp Val
    130                 135                 140

Val Lys Gly Gln Ile Arg Cys Gln Cys Pro Ser Pro Gly Leu Gln Leu
145                 150                 155                 160

Ala Pro Asp Gly Arg Thr Cys Val Asp Val Asp Glu Cys Ala Thr Gly
                165                 170                 175

Arg Ala Ser Cys Pro Arg Phe Arg Gln Cys Val Asn Thr Phe Gly Ser
            180                 185                 190

Tyr Ile Cys Lys Cys His Lys Gly Phe Asp Leu Met Tyr Ile Gly Gly
        195                 200                 205

Lys Tyr Gln Cys His Asp Ile Asp Glu Cys Ser Leu Gly Gln Tyr Gln
    210                 215                 220

Cys Ser Ser Phe Ala Arg Cys Tyr Asn Ile Arg Gly Ser Tyr Lys Cys
225                 230                 235                 240

Lys Cys Lys Glu Gly Tyr Gln Gly Asp Gly Leu Thr Cys Val Tyr Ile
                245                 250                 255

Pro Lys Val Met Ile Glu Pro Ser Gly Pro Ile His Val Pro Lys Gly
            260                 265                 270

Asn Gly Thr Ile Leu Lys Gly Asp Thr Gly Asn Asn Asn Trp Ile Pro
        275                 280                 285

Asp Val Gly Ser Thr Trp Trp Pro Pro Lys Thr Pro Tyr Ile Pro Pro
    290                 295                 300

Ile Ile Thr Asn Arg Pro Thr Ser Lys Pro Thr Thr Arg Pro Thr Pro
305                 310                 315                 320

Lys Pro Thr Pro Ile Pro Thr Pro Pro Pro Pro Pro Pro Leu Pro Thr
                325                 330                 335

Glu Leu Arg Thr Pro Leu Pro Pro Thr Thr Pro Glu Arg Pro Thr Thr
            340                 345                 350

Gly Leu Thr Thr Ile Ala Pro Ala Ala Ser Thr Pro Pro Gly Gly Ile
        355                 360                 365
```

```
Thr Val Asp Asn Arg Val Gln Thr Asp Pro Gln Lys Pro Arg Gly Asp
    370                 375                 380

Val Phe Ser Val Leu Val His Ser Cys Asn Phe Asp His Gly Leu Cys
385                 390                 395                 400

Gly Trp Ile Arg Glu Lys Asp Asn Asp Leu His Trp Glu Pro Ile Arg
                405                 410                 415

Asp Pro Ala Gly Gly Gln Tyr Leu Thr Val Ser Ala Ala Lys Ala Pro
            420                 425                 430

Gly Gly Lys Ala Ala Arg Leu Val Leu Pro Leu Gly Arg Leu Met His
        435                 440                 445

Ser Gly Asp Leu Cys Leu Ser Phe Arg His Lys Val Thr Gly Leu His
    450                 455                 460

Ser Gly Thr Leu Gln Val Phe Val Arg Lys His Gly Ala His Gly Ala
465                 470                 475                 480

Ala Leu Trp Gly Arg Asn Gly Gly His Gly Trp Arg Gln Thr Gln Ile
                485                 490                 495

Thr Leu Arg Gly Ala Asp Ile Lys Ser Val Val Phe Lys Gly Glu Lys
            500                 505                 510

Arg Arg Gly His Thr Gly Glu Ile Gly Leu Asp Asp Val Ser Leu Lys
        515                 520                 525

Lys Gly His Cys Ser Glu Glu Arg
    530                 535
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<210> 13
<211> 2684
<212> DNA
<213> Homo sapiens

<400> 13

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ttagaagtat tgaaaggacc agtatccttt cagaaatcac aaagatttaa acaacaaaaa 180
gaatctaaac aaaatcttaa tgttgacaaa gatactacct tgcctgcttc agctagaaaa 240
gttaagtctt cggaatcaaa gattcgtgtt cttctacagg aacgtggtgc ccaggacagg 300
cggatccagg atctggaaac tgagttggaa aagatggaag caaggctaaa tgctgcacta 360
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accaggacta atgaactact aaaatctaag ttttctgaaa atggtaacca gaagaatttg 480
agaattctaa gcttggagtt gatgaaactt agaaacaaaa gagaaacaaa gatgaggggt 540
atgatggcta agcaagaagg catggagatg aagctgcagg tcacccaaag gagtctcgaa 600
gagtctcaag ggaaaatagc ccaactggag ggaaaacttg tttcaataga gaaagaaaag 660
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gtcaacagga atagagaaca caacgaaaat ctaaatgcag agatgcaaaa cttagaacag 960
aagtttattc ttgaacaacg ggaacatgaa aagcttcaac aaaaagaatt acaaattgat 1020
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<210> 14
<211> 709
<212> PRT
<213> Homo sapiens

<400> 14

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Met Ser Phe Pro Lys Ala Pro Leu Lys Arg Phe Asn Asp Pro Ser Gly
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Cys Ala Pro Ser Pro Gly Ala Tyr Asp Val Lys Thr Leu Glu Val Leu
             20                  25                  30

Lys Gly Pro Val Ser Phe Gln Lys Ser Gln Arg Phe Lys Gln Gln Lys
         35                  40                  45

Glu Ser Lys Gln Asn Leu Asn Val Asp Lys Asp Thr Thr Leu Pro Ala
     50                  55                  60

Ser Ala Arg Lys Val Lys Ser Ser Glu Ser Lys Ile Arg Val Leu Leu
 65                  70                  75                  80

Gln Glu Arg Gly Ala Gln Asp Arg Arg Ile Gln Asp Leu Glu Thr Glu
                 85                  90                  95

Leu Glu Lys Met Glu Ala Arg Leu Asn Ala Ala Leu Arg Glu Lys Thr
            100                 105                 110
```

```
Ser Leu Ser Ala Asn Asn Ala Thr Leu Glu Lys Gln Leu Ile Glu Leu
        115                 120                 125

Thr Arg Thr Asn Glu Leu Leu Lys Ser Lys Phe Ser Glu Asn Gly Asn
    130                 135                 140

Gln Lys Asn Leu Arg Ile Leu Ser Leu Glu Leu Met Lys Leu Arg Asn
145                 150                 155                 160

Lys Arg Glu Thr Lys Met Arg Gly Met Met Ala Lys Gln Glu Gly Met
                165                 170                 175

Glu Met Lys Leu Gln Val Thr Gln Arg Ser Leu Glu Glu Ser Gln Gly
            180                 185                 190

Lys Ile Ala Gln Leu Glu Gly Lys Leu Val Ser Ile Glu Lys Glu Lys
        195                 200                 205

Ile Asp Glu Lys Ser Glu Thr Glu Lys Leu Leu Glu Tyr Ile Glu Glu
    210                 215                 220

Ile Ser Cys Ala Ser Asp Gln Val Glu Lys Tyr Lys Leu Asp Ile Ala
225                 230                 235                 240

Gln Leu Glu Glu Asn Leu Lys Glu Lys Asn Asp Glu Ile Leu Ser Leu
                245                 250                 255

Lys Gln Ser Leu Glu Asp Asn Ile Val Ile Leu Ser Lys Gln Val Glu
            260                 265                 270

Asp Leu Asn Val Lys Cys Gln Leu Leu Glu Thr Glu Lys Glu Asp His
        275                 280                 285

Val Asn Arg Asn Arg Glu His Asn Glu Asn Leu Asn Ala Glu Met Gln
    290                 295                 300

Asn Leu Glu Gln Lys Phe Ile Leu Glu Gln Arg Glu His Glu Lys Leu
305                 310                 315                 320

Gln Gln Lys Glu Leu Gln Ile Asp Ser Leu Leu Gln Gln Glu Lys Glu
                325                 330                 335

Leu Ser Ser Ser Leu His Gln Lys Leu Cys Ser Phe Gln Glu Glu Met
            340                 345                 350

Val Lys Glu Lys Asn Leu Phe Glu Glu Glu Leu Lys Gln Thr Leu Asp
        355                 360                 365

Glu Leu Asp Lys Leu Gln Gln Lys Glu Glu Gln Ala Glu Arg Leu Val
    370                 375                 380

Lys Gln Leu Glu Glu Glu Ala Lys Ser Arg Ala Glu Glu Leu Lys Leu
385                 390                 395                 400

Leu Glu Glu Lys Leu Lys Gly Lys Glu Ala Glu Leu Glu Lys Ser Ser
                405                 410                 415
```

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Ala Ala His Thr Gln Ala Thr Leu Leu Leu Gln Glu Lys Tyr Asp Ser
            420                 425                 430

Met Val Gln Ser Leu Glu Asp Val Thr Ala Gln Phe Glu Ser Tyr Lys
        435                 440                 445

Ala Leu Thr Ala Ser Glu Ile Glu Asp Leu Lys Leu Glu Asn Ser Ser
    450                 455                 460

Leu Gln Glu Lys Ala Ala Lys Ala Gly Lys Asn Ala Glu Asp Val Gln
465                 470                 475                 480

His Gln Ile Leu Ala Thr Glu Ser Ser Asn Gln Glu Tyr Val Arg Met
                485                 490                 495

Leu Leu Asp Leu Gln Thr Lys Ser Ala Leu Lys Glu Thr Glu Ile Lys
            500                 505                 510

Glu Ile Thr Val Ser Phe Leu Gln Lys Ile Thr Asp Leu Gln Asn Gln
        515                 520                 525

Leu Lys Gln Gln Glu Glu Asp Phe Arg Lys Gln Leu Glu Asp Glu Glu
    530                 535                 540

Gly Arg Lys Ala Glu Lys Glu Asn Thr Thr Ala Glu Leu Thr Glu Glu
545                 550                 555                 560

Ile Asn Lys Trp Arg Leu Leu Tyr Glu Glu Leu Tyr Asn Lys Thr Lys
                565                 570                 575

Pro Phe Gln Leu Gln Leu Asp Ala Phe Glu Val Glu Lys Gln Ala Leu
            580                 585                 590

Leu Asn Glu His Gly Ala Ala Gln Glu Gln Leu Asn Lys Ile Arg Asp
        595                 600                 605

Ser Tyr Ala Lys Leu Leu Gly His Gln Asn Leu Lys Gln Lys Ile Lys
    610                 615                 620

His Val Val Lys Leu Lys Asp Glu Asn Ser Gln Leu Lys Ser Glu Val
625                 630                 635                 640

Ser Lys Leu Arg Cys Gln Leu Ala Lys Lys Lys Gln Ser Glu Thr Lys
                645                 650                 655

Leu Gln Glu Glu Leu Asn Lys Val Leu Gly Ile Lys His Phe Asp Pro
            660                 665                 670

Ser Lys Ala Phe His His Glu Ser Lys Glu Asn Phe Ala Leu Lys Thr
        675                 680                 685

Pro Leu Lys Glu Gly Asn Thr Asn Cys Tyr Arg Ala Pro Met Glu Cys
    690                 695                 700

Gln Glu Ser Trp Lys
705
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<210> 15
<211> 2020
<212> DNA
<213> Homo sapiens

<400> 15
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tagaagtatt gaaaggacca gtatcctttc agaaatcaca aagatttaaa caacaaaaag 180
aatctaaaca aaatcttaat gttgacaaag atactacctt gcctgcttca gctagaaaag 240
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aatctgaaac agaaaaactc ttggaataca tcgaagaaat tagttgtgct tcagatcaag 540
tggaaaaata caagctagat attgcccagt tagaagaaaa tttgaaagag aagaatgatg 600
aaattttaag ccttaagcag tctcttgagg acaatattgt tatattatct aaacaagtag 660
aagatctaaa tgtgaaatgt cagctgcttg aaacagaaaa agaagaccat gtcaacagga 720
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aacaagagaa agaattatct tcgagtcttc atcagaagct ctgttctttt caagaggaaa 900
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<210> 16
<211> 646
<212> PRT
<213> Homo sapiens

<400> 16
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Cys Ala Pro Ser Pro Gly Ala Tyr Asp Val Lys Thr Leu Glu Val Leu
20 25 30

Lys Gly Pro Val Ser Phe Gln Lys Ser Gln Arg Phe Lys Gln Gln Lys
35 40 45

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Glu Ser Lys Gln Asn Leu Asn Val Asp Lys Asp Thr Thr Leu Pro Ala
     50                  55                  60

Ser Ala Arg Lys Val Lys Ser Ser Glu Ser Lys Ile Cys Val Leu Leu
 65                  70                  75                  80

Gln Glu Arg Gly Ala Gln Asp Arg Arg Ile Gln Asp Leu Glu Thr Glu
                85                  90                  95

Leu Glu Lys Met Glu Ala Arg Leu Asn Ala Ala Leu Arg Glu Lys Thr
            100                 105                 110

Ser Leu Ser Ala Asn Asn Ala Thr Leu Glu Lys Gln Leu Ile Glu Leu
        115                 120                 125

Thr Arg Thr Asn Glu Leu Leu Lys Ser Lys Val Ser Ile Glu Lys Glu
    130                 135                 140

Lys Ile Asp Glu Lys Ser Glu Thr Glu Lys Leu Leu Glu Tyr Ile Glu
145                 150                 155                 160

Glu Ile Ser Cys Ala Ser Asp Gln Val Glu Lys Tyr Lys Leu Asp Ile
                165                 170                 175

Ala Gln Leu Glu Glu Asn Leu Lys Glu Lys Asn Asp Glu Ile Leu Ser
            180                 185                 190

Leu Lys Gln Ser Leu Glu Asp Asn Ile Val Ile Leu Ser Lys Gln Val
        195                 200                 205

Glu Asp Leu Asn Val Lys Cys Gln Leu Leu Glu Thr Glu Lys Glu Asp
    210                 215                 220

His Val Asn Arg Asn Arg Glu His Asn Glu Asn Leu Asn Ala Glu Met
225                 230                 235                 240

Gln Asn Leu Glu Gln Lys Phe Ile Leu Glu Gln Arg Glu His Glu Lys
                245                 250                 255

Leu Gln Gln Lys Glu Leu Gln Ile Asp Ser Leu Leu Gln Gln Glu Lys
            260                 265                 270

Glu Leu Ser Ser Ser Leu His Gln Lys Leu Cys Ser Phe Gln Glu Glu
        275                 280                 285

Met Val Lys Glu Lys Asn Leu Phe Glu Glu Glu Leu Lys Gln Thr Leu
    290                 295                 300

Asp Glu Leu Asp Lys Leu Gln Gln Lys Glu Glu Gln Ala Glu Arg Leu
305                 310                 315                 320

Val Lys Gln Leu Glu Glu Glu Ala Lys Ser Arg Ala Glu Glu Leu Lys
                325                 330                 335

Leu Leu Glu Glu Lys Leu Lys Gly Lys Glu Ala Glu Leu Glu Lys Ser
            340                 345                 350
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Ser Ala Ala His Thr Gln Ala Thr Leu Leu Leu Gln Glu Lys Tyr Asp
        355                 360                 365

Ser Met Val Gln Ser Leu Glu Asp Val Thr Ala Gln Phe Glu Ser Tyr
    370                 375                 380

Lys Ala Leu Thr Ala Ser Glu Ile Glu Asp Leu Lys Leu Glu Asn Ser
385                 390                 395                 400

Ser Leu Gln Glu Lys Ala Ala Lys Ala Gly Lys Asn Ala Glu Asp Val
                405                 410                 415

Gln His Gln Ile Leu Ala Thr Glu Ser Ser Asn Gln Glu Tyr Val Arg
            420                 425                 430

Met Leu Leu Asp Leu Gln Thr Lys Ser Ala Leu Lys Glu Thr Glu Ile
        435                 440                 445

Lys Glu Ile Thr Val Ser Phe Leu Gln Lys Ile Thr Asp Leu Gln Asn
    450                 455                 460

Gln Leu Lys Gln Gln Glu Glu Asp Phe Arg Lys Gln Leu Glu Asp Glu
465                 470                 475                 480

Glu Gly Arg Lys Ala Glu Lys Glu Asn Thr Thr Ala Glu Leu Thr Glu
                485                 490                 495

Glu Ile Asn Lys Trp Arg Leu Leu Tyr Glu Glu Leu Tyr Asn Lys Thr
            500                 505                 510

Lys Pro Phe Gln Leu Gln Leu Asp Ala Phe Glu Val Glu Lys Gln Ala
        515                 520                 525

Leu Leu Asn Glu His Gly Ala Ala Gln Glu Gln Leu Asn Lys Ile Arg
    530                 535                 540

Asp Ser Tyr Ala Lys Leu Leu Gly His Gln Asn Leu Lys Gln Lys Ile
545                 550                 555                 560

Lys His Val Val Lys Leu Lys Asp Glu Asn Ser Gln Leu Lys Ser Glu
                565                 570                 575

Val Ser Lys Leu Arg Cys Gln Leu Ala Lys Lys Lys Gln Ser Glu Thr
            580                 585                 590

Lys Leu Gln Glu Glu Leu Asn Lys Val Leu Gly Ile Lys His Phe Asp
        595                 600                 605

Pro Ser Lys Ala Phe His His Glu Ser Lys Glu Asn Phe Ala Leu Lys
    610                 615                 620

Thr Pro Leu Lys Glu Gly Asn Thr Asn Cys Tyr Arg Ala Pro Met Glu
625                 630                 635                 640

Cys Gln Glu Ser Trp Lys
                645
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<210> 17
<211> 2187
<212> DNA
<213> Homo sapiens

<400> 17
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ttagaagtat tgaaaggacc agtatccttt cagaaatcac aaagatttaa acaacaaaaa 180
gaatctaaac aaaatcttaa tgttgacaaa gatactacct tgcctgcttc agctagaaaa 240
gttaagtctt cggaatcaaa gattcgtgtt cttctacagg aacgtggtgc ccaggacagg 300
cggatccagg atctggaaac tgagttggaa aagatggaag caaggctaaa tgctgcacta 360
agggaaaaaa catctctctc tgcaaataat gctacactgg aaaaacaact tattgaattg 420
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agaattctaa gcttggagtt gatgaaactt agaaacaaaa gagaaacaaa gatgaggggt 540
atgatggcta agcaagaagg catggagatg aagctgcagg tcacccaaag gagtctcgaa 600
gagtctcaag ggaaaatagc ccaactggag ggaaaacttg tttcaataga gaaagaaaag 660
attgatgaaa aatctgaaac agaaaaactc ttggaataca tcgaagaaat tagttgtgct 720
tcagatcaag tggaaaaata caagctagat attgcccagt tagaagaaaa tttgaaagag 780
aagaatgatg aaattttaag ccttaagcag tctcttgagg agaatattgt tatattatct 840
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aagtttattc ttgaacaaca ggaacgtgaa aagcttcaac aaaaagaatt acaaattgat 1020
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caagaggaaa tggttaaaga gaagaatctg tttgaggaag aattaaagca aacactggat 1140
gagcttgata aattacagca aaaggaggaa caagctgaaa ggctggtcaa gcaattggaa 1200
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gcggccaagg ctgggaaaaa tgcagaggat gttcagcatc agattttggc aactgagagc 1500
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ctcaagcaac aggaggaaga ctttagaaaa cagctggaag atgaagaagg aagaaaagct 1680
gaaaaagaaa atacaacagc agaattaact gaagaaatta acaagtggcg tctcctctat 1740
gaagaactat ataataaaac aaaacctttt cagctacaac tagatgcttt tgaagtagaa 1800
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tcatatgcta aattattggg tcatcagaat ttgaaacaaa aaatcaagca tgttgtgaag 1920
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aaaaaaaaac aaagtgagac aaaacttcaa gaggaattga ataaagttct aggtatcaaa 2040
cactttgatc cttcaaaggc ttttcatcat gaaagtaaag aaaattttgc cctgaagacc 2100
ccattaaaag aaggcaatac aaactgttac cgagctccta tggagtgtca agaatcatgg 2160
aagtaaacat ctgagaaacc tgttgaa 2187

<210> 18
<211> 709
<212> PRT
<213> Homo sapiens

<400> 18
Met Ser Phe Pro Lys Ala Pro Leu Lys Arg Phe Asn Asp Pro Ser Gly
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Cys Ala Pro Ser Pro Gly Ala Tyr Asp Val Lys Thr Leu Glu Val Leu

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                20                  25                  30

Lys Gly Pro Val Ser Phe Gln Lys Ser Gln Arg Phe Lys Gln Gln Lys
            35                  40                  45

Glu Ser Lys Gln Asn Leu Asn Val Asp Lys Asp Thr Thr Leu Pro Ala
        50                  55                  60

Ser Ala Arg Lys Val Lys Ser Ser Glu Ser Lys Ile Arg Val Leu Leu
65                  70                  75                  80

Gln Glu Arg Gly Ala Gln Asp Arg Arg Ile Gln Asp Leu Glu Thr Glu
                85                  90                  95

Leu Glu Lys Met Glu Ala Arg Leu Asn Ala Ala Leu Arg Glu Lys Thr
            100                 105                 110

Ser Leu Ser Ala Asn Asn Ala Thr Leu Glu Lys Gln Leu Ile Glu Leu
        115                 120                 125

Thr Arg Thr Asn Glu Leu Leu Lys Ser Lys Phe Ser Glu Asn Asp Asn
    130                 135                 140

Gln Lys Asn Leu Arg Ile Leu Ser Leu Glu Leu Met Lys Leu Arg Asn
145                 150                 155                 160

Lys Arg Glu Thr Lys Met Arg Gly Met Met Ala Lys Gln Glu Gly Met
                165                 170                 175

Glu Met Lys Leu Gln Val Thr Gln Arg Ser Leu Glu Glu Ser Gln Gly
            180                 185                 190

Lys Ile Ala Gln Leu Glu Gly Lys Leu Val Ser Ile Glu Lys Glu Lys
        195                 200                 205

Ile Asp Glu Lys Ser Glu Thr Glu Lys Leu Leu Glu Tyr Ile Glu Glu
    210                 215                 220

Ile Ser Cys Ala Ser Asp Gln Val Glu Lys Tyr Lys Leu Asp Ile Ala
225                 230                 235                 240

Gln Leu Glu Glu Asn Leu Lys Glu Lys Asn Asp Glu Ile Leu Ser Leu
                245                 250                 255

Lys Gln Ser Leu Glu Glu Asn Ile Val Ile Leu Ser Lys Gln Val Glu
            260                 265                 270

Asp Leu Asn Val Lys Cys Gln Leu Leu Glu Lys Glu Lys Glu Asp His
        275                 280                 285

Val Asn Arg Asn Arg Glu His Asn Glu Asn Leu Asn Ala Glu Met Gln
    290                 295                 300

Asn Leu Lys Gln Lys Phe Ile Leu Glu Gln Gln Glu Arg Glu Lys Leu
305                 310                 315                 320

Gln Gln Lys Glu Leu Gln Ile Asp Ser Leu Leu Gln Gln Glu Lys Glu
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                325                 330                 335

Leu Ser Ser Ser Leu His Gln Lys Leu Cys Ser Phe Gln Glu Glu Met
            340                 345                 350

Val Lys Glu Lys Asn Leu Phe Glu Glu Glu Leu Lys Gln Thr Leu Asp
        355                 360                 365

Glu Leu Asp Lys Leu Gln Gln Lys Glu Glu Gln Ala Glu Arg Leu Val
    370                 375                 380

Lys Gln Leu Glu Glu Glu Ala Lys Ser Arg Ala Glu Glu Leu Lys Leu
385                 390                 395                 400

Leu Glu Glu Lys Leu Lys Gly Lys Glu Ala Glu Leu Glu Lys Ser Ser
                405                 410                 415

Ala Ala His Thr Gln Ala Thr Leu Leu Leu Gln Glu Lys Tyr Asp Ser
            420                 425                 430

Met Val Gln Ser Leu Glu Asp Val Thr Ala Gln Phe Glu Gly Tyr Lys
        435                 440                 445

Ala Leu Thr Ala Ser Glu Ile Glu Asp Leu Lys Leu Glu Asn Ser Ser
    450                 455                 460

Leu Gln Glu Lys Ala Ala Lys Ala Gly Lys Asn Ala Glu Asp Val Gln
465                 470                 475                 480

His Gln Ile Leu Ala Thr Glu Ser Ser Asn Gln Glu Tyr Val Arg Met
                485                 490                 495

Leu Leu Asp Leu Gln Thr Lys Ser Ala Leu Lys Glu Thr Glu Ile Lys
            500                 505                 510

Glu Ile Thr Val Ser Phe Leu Gln Lys Ile Thr Asp Leu Gln Asn Gln
        515                 520                 525

Leu Lys Gln Gln Glu Glu Asp Phe Arg Lys Gln Leu Glu Asp Glu Glu
    530                 535                 540

Gly Arg Lys Ala Glu Lys Glu Asn Thr Thr Ala Glu Leu Thr Glu Glu
545                 550                 555                 560

Ile Asn Lys Trp Arg Leu Leu Tyr Glu Glu Leu Tyr Asn Lys Thr Lys
                565                 570                 575

Pro Phe Gln Leu Gln Leu Asp Ala Phe Glu Val Glu Lys Gln Ala Leu
            580                 585                 590

Leu Asn Glu His Gly Ala Ala Gln Glu Gln Leu Asn Lys Ile Arg Asp
        595                 600                 605

Ser Tyr Ala Lys Leu Leu Gly His Gln Asn Leu Lys Gln Lys Ile Lys
    610                 615                 620

His Val Val Lys Leu Lys Asp Glu Asn Ser Gln Leu Lys Ser Glu Val
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625 630 635 640

Ser Lys Leu Arg Cys Gln Leu Ala Lys Lys Lys Gln Ser Glu Thr Lys
645 650 655

Leu Gln Glu Glu Leu Asn Lys Val Leu Gly Ile Lys His Phe Asp Pro
660 665 670

Ser Lys Ala Phe His His Glu Ser Lys Glu Asn Phe Ala Leu Lys Thr
675 680 685

Pro Leu Lys Glu Gly Asn Thr Asn Cys Tyr Arg Ala Pro Met Glu Cys
690 695 700

Gln Glu Ser Trp Lys
705

<210> 19
<211> 1196
<212> DNA
<213> Homo sapiens

<400> 19
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aagatgatcg tcataaaaac atatttttct ctcccctgag cctctcagct gcccttggta 180
tggtacgctt gggtgctaga agtgacagtg cacatcagat tgatgaggta cgttccttaa 240
acaatgagag cggactggtc agctgctact ttgggcagct tctctccaaa ttagacagga 300
tcaagactga ttacacactg agtattgcca acaggcttta tggagagtcc agcctgggag 360
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atacaattca tactcaggat attctctggg atctttttt aggtaaaatc aaggaactct 480
tcagcaagga cgctattaat gctgagactg tgctggtact ggtgaatgct gtttacttca 540
aggccaaatg ggaaacatac tttgaccatg aaaacacggt ggatgcacct ttctgtctaa 600
atcagaatga aaacaagagt gtgaagatga tgacgcaaaa aggcctctac agaattggct 660
tcatagagga ggtgaaggca cagatcctgg aaatgaggta caccaagggg aagctcagca 720
tgttcgtgct gctgccatct cactctaaag ataacctgaa gggtatcacc tatgaaaaaa 780
tggtggcctg gagcagctca gaaaacatgt cagaagaatc ggtggtcctg tccttccccc 840
ggttcaccct ggaagacagc tatgatctca attccatttt acaagacatg ggcattacgg 900
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tgtcaaaaat tatccacaaa acctttgtgg aggtggatga aaacggtacc caggcagctg 1020
cagccactgg ggctgttgtc tcggaaaggt cactacgatc ttgggtggag tttaatgcca 1080
accacccttt tctcttttc attagacaca acaaaaccca aaccattctc ttttatggca 1140
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<210> 20
<211> 365
<212> PRT
<213> Homo sapiens

<400> 20
Met Asp Ser Leu Val Thr Ala Asn Thr Lys Phe Cys Phe Asp Leu Phe
1 5 10 15

Gln Glu Ile Gly Lys Asp Asp Arg His Lys Asn Ile Phe Phe Ser Pro
20 25 30

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Leu Ser Leu Ser Ala Ala Leu Gly Met Val Arg Leu Gly Ala Arg Ser
          35                  40                  45

Asp Ser Ala His Gln Ile Asp Glu Val Arg Ser Leu Asn Asn Glu Ser
      50                  55                  60

Gly Leu Val Ser Cys Tyr Phe Gly Gln Leu Leu Ser Lys Leu Asp Arg
 65                  70                  75                  80

Ile Lys Thr Asp Tyr Thr Leu Ser Ile Ala Asn Arg Leu Tyr Gly Glu
                 85                  90                  95

Ser Ser Leu Gly Asp Lys Ser Glu Thr Leu Ser Gln Lys Lys Lys Lys
            100                 105                 110

Lys Ile Ile Tyr Thr Asn Ala Phe Asp Thr Ile His Thr Gln Asp Ile
        115                 120                 125

Leu Trp Asp Leu Phe Leu Gly Lys Ile Lys Glu Leu Phe Ser Lys Asp
    130                 135                 140

Ala Ile Asn Ala Glu Thr Val Leu Val Leu Val Asn Ala Val Tyr Phe
145                 150                 155                 160

Lys Ala Lys Trp Glu Thr Tyr Phe Asp His Glu Asn Thr Val Asp Ala
                165                 170                 175

Pro Phe Cys Leu Asn Gln Asn Glu Asn Lys Ser Val Lys Met Met Thr
            180                 185                 190

Gln Lys Gly Leu Tyr Arg Ile Gly Phe Ile Glu Glu Val Lys Ala Gln
        195                 200                 205

Ile Leu Glu Met Arg Tyr Thr Lys Gly Lys Leu Ser Met Phe Val Leu
    210                 215                 220

Leu Pro Ser His Ser Lys Asp Asn Leu Lys Gly Ile Thr Tyr Glu Lys
225                 230                 235                 240

Met Val Ala Trp Ser Ser Ser Glu Asn Met Ser Glu Glu Ser Val Val
                245                 250                 255

Leu Ser Phe Pro Arg Phe Thr Leu Glu Asp Ser Tyr Asp Leu Asn Ser
            260                 265                 270

Ile Leu Gln Asp Met Gly Ile Thr Asp Ile Phe Asp Glu Thr Arg Ala
        275                 280                 285

Asp Leu Thr Gly Ile Ser Pro Ser Pro Asn Leu Tyr Leu Ser Lys Ile
    290                 295                 300

Ile His Lys Thr Phe Val Glu Val Asp Glu Asn Gly Thr Gln Ala Ala
305                 310                 315                 320

Ala Ala Thr Gly Ala Val Val Ser Glu Arg Ser Leu Arg Ser Trp Val
                325                 330                 335
```

```
Glu Phe Asn Ala Asn His Pro Phe Leu Phe Phe Ile Arg His Asn Lys
            340                 345                 350

Thr Gln Thr Ile Leu Phe Tyr Gly Arg Val Cys Ser Pro
        355                 360                 365


<210> 21
<211> 1590
<212> DNA
<213> Homo sapiens

<400> 21
cagctcccgg gcaccatgcg aaccgccccg agcctccgcc gctgcgtctg cctgctgctc 60
gccgcgatcc tggacctggc gcgctacctg acagtcaaca ttgagcctct ccccccctgtg 120
gtggctggag acgccgtgac tttgaagtgt aacttcaaga cagatgggcg catgcgggag 180
atcgtgtggt accgggtgac ggatggtggc accatcaagc aaaagatctt caccttcgac 240
gccatgttct ccaccaacta ctcacacatg gagaactacc gcaagcgaga ggacctggtg 300
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ttcctcaacg tcatggctcc tcccacctcc attgaagtgg tggctgctga cacaccagcc 480
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attttcccca aaaaaaaaaa aaaaaaaaaa                                  1590


<210> 22
<211> 465
<212> PRT
<213> Homo sapiens

<400> 22
Met Arg Thr Ala Pro Ser Leu Arg Arg Cys Val Cys Leu Leu Leu Ala
  1               5                  10                  15

Ala Ile Leu Asp Leu Ala Arg Tyr Leu Thr Val Asn Ile Glu Pro Leu
            20                  25                  30

Pro Pro Val Val Ala Gly Asp Ala Val Thr Leu Lys Cys Asn Phe Lys
        35                  40                  45
```

```
Thr Asp Gly Arg Met Arg Glu Ile Val Trp Tyr Arg Val Thr Asp Gly
     50                  55                  60

Gly Thr Ile Lys Gln Lys Ile Phe Thr Phe Asp Ala Met Phe Ser Thr
 65                  70                  75                  80

Asn Tyr Ser His Met Glu Asn Tyr Arg Lys Arg Glu Asp Leu Val Tyr
                 85                  90                  95

Gln Ser Thr Val Arg Leu Pro Glu Val Arg Ile Ser Asp Asn Gly Pro
            100                 105                 110

Tyr Glu Cys His Val Gly Ile Tyr Asp Arg Ala Thr Arg Glu Lys Val
        115                 120                 125

Val Leu Ala Ser Gly Asn Ile Phe Leu Asn Val Met Ala Pro Pro Thr
    130                 135                 140

Ser Ile Glu Val Val Ala Ala Asp Thr Pro Ala Pro Phe Ser Arg Tyr
145                 150                 155                 160

Gln Ala Gln Asn Phe Thr Leu Val Cys Ile Val Ser Gly Gly Lys Pro
                165                 170                 175

Ala Pro Met Val Tyr Phe Lys Arg Asp Gly Glu Pro Ile Asp Ala Val
            180                 185                 190

Pro Leu Ser Glu Pro Pro Ala Ala Ser Ser Gly Pro Leu Gln Asp Ser
        195                 200                 205

Arg Pro Phe Arg Ser Leu Leu Leu Asp Leu Asp Asp Thr Lys Met Gln
    210                 215                 220

Lys Ser Leu Ser Leu Leu Asp Ala Glu Asn Arg Gly Gly Arg Pro Tyr
225                 230                 235                 240

Thr Glu Arg Pro Ser Arg Gly Leu Thr Pro Asp Pro Asn Ile Leu Leu
                245                 250                 255

Gln Pro Thr Thr Glu Asn Ile Pro Glu Thr Val Val Ser Arg Glu Phe
            260                 265                 270

Pro Arg Trp Val His Ser Ala Glu Pro Thr Tyr Phe Leu Arg His Ser
        275                 280                 285

Arg Thr Pro Ser Ser Asp Gly Thr Val Glu Val Arg Ala Leu Leu Thr
    290                 295                 300

Trp Thr Leu Asn Pro Gln Ile Asp Asn Glu Ala Leu Phe Ser Cys Glu
305                 310                 315                 320

Val Lys His Pro Ala Leu Ser Met Pro Met Arg Ala Glu Val Thr Pro
                325                 330                 335

Val Ala Pro Lys Gly Pro Lys Ile Val Met Thr Pro Ser Arg Ala Arg
            340                 345                 350
```

```
Val Gly Asp Thr Val Arg Ile Leu Val His Gly Phe Gln Asn Glu Val
        355                 360                 365

Phe Pro Glu Pro Met Phe Thr Trp Thr Arg Val Gly Ser Arg Leu Leu
    370                 375                 380

Asp Gly Ser Ala Glu Phe Asp Gly Lys Glu Leu Val Leu Glu Arg Val
385                 390                 395                 400

Pro Ala Glu Leu Asn Gly Ser Met Tyr Arg Cys Thr Ala Gln Asn Pro
                405                 410                 415

Leu Gly Ser Thr Asp Thr His Thr Arg Leu Ile Val Phe Glu Asn Pro
            420                 425                 430

Asn Ile Pro Arg Gly Thr Glu Asp Ser Asn Gly Ser Ile Gly Pro Thr
        435                 440                 445

Gly Ala Arg Leu Thr Leu Val Leu Ala Leu Thr Val Ile Leu Glu Leu
    450                 455                 460

Thr
465
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<210> 23
<211> 1593
<212> DNA
<213> Homo sapiens

<400> 23

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cggggtgggc gaccctacac ggagcgcccc tcccgtggcc tgaccccaga tcccaacatc 780
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caggcactga catctccacg accggttttc atttcttttc taaactattt ccagtcttgt 1500
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acaattttcc ccaaaaaaaa aaaaaaaaaa aaa 1593

<210> 24
<211> 466
<212> PRT
<213> Homo sapiens

<400> 24

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Met Arg Thr Ala Pro Ser Leu Arg Arg Cys Val Cys Leu Leu Leu Ala
  1               5                  10                  15

Ala Ile Leu Asp Leu Ala Arg Gly Tyr Leu Thr Val Asn Ile Glu Pro
             20                  25                  30

Leu Pro Pro Val Val Ala Gly Asp Ala Val Thr Leu Lys Cys Asn Phe
         35                  40                  45

Lys Thr Asp Gly Arg Met Arg Glu Ile Val Trp Tyr Arg Val Thr Asp
     50                  55                  60

Gly Gly Thr Ile Lys Gln Lys Ile Phe Thr Phe Asp Ala Met Phe Ser
 65                  70                  75                  80

Thr Asn Tyr Ser His Met Glu Asn Tyr Arg Lys Arg Glu Asp Leu Val
                 85                  90                  95

Tyr Gln Ser Thr Val Arg Leu Pro Glu Val Arg Ile Ser Asp Asn Gly
            100                 105                 110

Pro Tyr Glu Cys His Val Gly Ile Tyr Asp Arg Ala Thr Arg Glu Lys
        115                 120                 125

Val Val Leu Ala Ser Gly Asn Ile Phe Leu Asn Val Met Ala Pro Pro
    130                 135                 140

Thr Ser Ile Glu Val Val Ala Ala Asp Thr Pro Ala Pro Phe Ser Arg
145                 150                 155                 160

Tyr Gln Ala Gln Asn Phe Thr Leu Val Cys Ile Val Ser Gly Gly Lys
                165                 170                 175

Pro Ala Pro Met Val Tyr Phe Lys Arg Asp Gly Glu Pro Ile Asp Ala
            180                 185                 190

Val Pro Leu Ser Glu Pro Pro Ala Ala Ser Ser Gly Pro Leu Gln Asp
        195                 200                 205

Ser Arg Pro Phe Arg Ser Leu Leu Leu Asp Leu Asp Asp Thr Lys Met
    210                 215                 220

Gln Lys Ser Leu Ser Leu Leu Asp Ala Glu Asn Arg Gly Gly Arg Pro
225                 230                 235                 240

Tyr Thr Glu Arg Pro Ser Arg Gly Leu Thr Pro Asp Pro Asn Ile Leu
                245                 250                 255
```

```
Leu Gln Pro Thr Thr Glu Asn Ile Pro Glu Thr Val Val Ser Arg Glu
            260                 265                 270

Phe Pro Arg Trp Val His Ser Ala Glu Pro Thr Tyr Phe Leu Arg His
        275                 280                 285

Ser Arg Thr Pro Ser Ser Asp Gly Thr Val Glu Val Arg Ala Leu Leu
    290                 295                 300

Thr Trp Thr Leu Asn Pro Gln Ile Asp Asn Glu Ala Leu Phe Ser Cys
305                 310                 315                 320

Glu Val Lys His Pro Ala Leu Ser Met Pro Met Arg Ala Glu Val Thr
                325                 330                 335

Pro Val Ala Pro Lys Gly Pro Lys Ile Val Met Thr Pro Ser Arg Ala
            340                 345                 350

Arg Val Gly Asp Thr Val Arg Ile Leu Val His Gly Phe Gln Asn Glu
        355                 360                 365

Val Phe Pro Glu Pro Met Phe Thr Trp Thr Arg Val Gly Ser Arg Leu
    370                 375                 380

Leu Asp Gly Ser Ala Glu Phe Asp Gly Lys Glu Leu Val Leu Glu Arg
385                 390                 395                 400

Val Pro Ala Glu Leu Asn Gly Ser Met Tyr Arg Cys Thr Ala Gln Asn
                405                 410                 415

Pro Leu Gly Ser Thr Asp Thr His Thr Arg Leu Ile Val Phe Glu Asn
            420                 425                 430

Pro Asn Ile Pro Arg Gly Thr Glu Asp Ser Asn Gly Ser Ile Gly Pro
        435                 440                 445

Thr Gly Ala Arg Leu Thr Leu Val Leu Ala Leu Thr Val Ile Leu Glu
    450                 455                 460

Leu Thr
465
```

<210> 25
<211> 1407
<212> DNA
<213> Homo sapiens

<400> 25
atgcgaaccg ccccgagcct ccgccgctgc gtctgcctgc tgctcgccgc gatcctggac 60
ctggcgcgcg gctacctgac agtcaacatt gagcctctcc cccctgtggt ggctggagac 120
gccgtgactt tgaagtgtaa cttcaagaca gatgggcgca tgcgggagat cgtgtggtac 180
cgggtgacgg atggtggcac catcaagcaa aagatcttca ccttcgacgc catgttctcc 240
accaactact cacacatgga gaactaccgc aagcgagagg acctggtgta ccagtccact 300
gtgaggctgc ccgaggtccg gatctcagac aatggtccct atgagtgcca tgtgggcatc 360
tacgaccgcg ccaccaggga gaaggtggtc ctggcatcag gcaacatctt cctcaacgtc 420

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atggctcctc ccacctccat tgaagtggtg gctgctgaca caccagcccc cttcagccgc 480
taccaagccc agaacttcac gctggtctgc atcgtgtctg gaggaaaacc agcacccatg 540
gtttatttca aacgagatgg ggaaccaatc gacgcagtgc ccctatcaga gccaccagct 600
gcgagctccg gccccctaca ggacagcagg cccttccgca gccttctgca ccgtgacctg 660
gatgacacca agatgcagaa gtcactgtcc ctcctggacg ccgagaaccg gggtgggcga 720
ccctacacgg agcgcccctc ccgtggcctg accccagatc ccaacatcct cctccagcca 780
accacagaga acataccaga gacggtcgtg agccgtgagt ttccccgctg ggtccacagc 840
gccgagccca cctacttcct gcgccacagc cgcaccccga gcagtgacgg cactgtggaa 900
gtacgtgccc tgctcacctg gaccctcaac ccacagatcg acaacgaggc cctcttcagc 960
tgcgaggtca agcacccagc tctgtcgatg cccatgcagg cagaggtcac gctggttgcc 1020
cccaaaggac ccaaaattgt gatgacgccc agcagagccc gggtagggga cacagtgagg 1080
attctggtcc atgggtttca gaacgaagtc ttcccggagc ccatgttcac gtggacgcgg 1140
gttgggagcc gcctcctgga cggcagcgct gagttcgacg ggaaggagct ggtgctggag 1200
cgggttcccg ccgagctcaa tggctccatg tatcgctgca ccgcccagaa cccactgggc 1260
tccaccgaca cgcacacccg gctcatcgtg tttgaaaacc caaatatccc aagaggaacg 1320
gaggactcta atggttccat tggccccact ggtgcccggc tcaccttggt gctcgccctg 1380
acagtgattc tggagctgac gtgaagg                                     1407
```

<210> 26
<211> 467
<212> PRT
<213> Homo sapiens

<400> 26

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Met Arg Thr Ala Pro Ser Leu Arg Arg Cys Val Cys Leu Leu Leu Ala
  1               5                  10                  15

Ala Ile Leu Asp Leu Ala Arg Gly Tyr Leu Thr Val Asn Ile Glu Pro
             20                  25                  30

Leu Pro Pro Val Val Ala Gly Asp Ala Val Thr Leu Lys Cys Asn Phe
         35                  40                  45

Lys Thr Asp Gly Arg Met Arg Glu Ile Val Trp Tyr Arg Val Thr Asp
     50                  55                  60

Gly Gly Thr Ile Lys Gln Lys Ile Phe Thr Phe Asp Ala Met Phe Ser
 65                  70                  75                  80

Thr Asn Tyr Ser His Met Glu Asn Tyr Arg Lys Arg Glu Asp Leu Val
                 85                  90                  95

Tyr Gln Ser Thr Val Arg Leu Pro Glu Val Arg Ile Ser Asp Asn Gly
            100                 105                 110

Pro Tyr Glu Cys His Val Gly Ile Tyr Asp Arg Ala Thr Arg Glu Lys
        115                 120                 125

Val Val Leu Ala Ser Gly Asn Ile Phe Leu Asn Val Met Ala Pro Pro
    130                 135                 140

Thr Ser Ile Glu Val Val Ala Ala Asp Thr Pro Ala Pro Phe Ser Arg
145                 150                 155                 160

Tyr Gln Ala Gln Asn Phe Thr Leu Val Cys Ile Val Ser Gly Gly Lys
                165                 170                 175
```

```
Pro Ala Pro Met Val Tyr Phe Lys Arg Asp Gly Glu Pro Ile Asp Ala
            180                 185                 190

Val Pro Leu Ser Glu Pro Pro Ala Ala Ser Ser Gly Pro Leu Gln Asp
        195                 200                 205

Ser Arg Pro Phe Arg Ser Leu Leu His Arg Asp Leu Asp Asp Thr Lys
    210                 215                 220

Met Gln Lys Ser Leu Ser Leu Leu Asp Ala Glu Asn Arg Gly Gly Arg
225                 230                 235                 240

Pro Tyr Thr Glu Arg Pro Ser Arg Gly Leu Thr Pro Asp Pro Asn Ile
                245                 250                 255

Leu Leu Gln Pro Thr Thr Glu Asn Ile Pro Glu Thr Val Val Ser Arg
            260                 265                 270

Glu Phe Pro Arg Trp Val His Ser Ala Glu Pro Thr Tyr Phe Leu Arg
        275                 280                 285

His Ser Arg Thr Pro Ser Ser Asp Gly Thr Val Glu Val Arg Ala Leu
    290                 295                 300

Leu Thr Trp Thr Leu Asn Pro Gln Ile Asp Asn Glu Ala Leu Phe Ser
305                 310                 315                 320

Cys Glu Val Lys His Pro Ala Leu Ser Met Pro Met Gln Ala Glu Val
                325                 330                 335

Thr Leu Val Ala Pro Lys Gly Pro Lys Ile Val Met Thr Pro Ser Arg
            340                 345                 350

Ala Arg Val Gly Asp Thr Val Arg Ile Leu Val His Gly Phe Gln Asn
        355                 360                 365

Glu Val Phe Pro Glu Pro Met Phe Thr Trp Thr Arg Val Gly Ser Arg
    370                 375                 380

Leu Leu Asp Gly Ser Ala Glu Phe Asp Gly Lys Glu Leu Val Leu Glu
385                 390                 395                 400

Arg Val Pro Ala Glu Leu Asn Gly Ser Met Tyr Arg Cys Thr Ala Gln
                405                 410                 415

Asn Pro Leu Gly Ser Thr Asp Thr His Thr Arg Leu Ile Val Phe Glu
            420                 425                 430

Asn Pro Asn Ile Pro Arg Gly Thr Glu Asp Ser Asn Gly Ser Ile Gly
        435                 440                 445

Pro Thr Gly Ala Arg Leu Thr Leu Val Leu Ala Leu Thr Val Ile Leu
    450                 455                 460

Glu Leu Thr
465
```

<210> 27
<211> 682
<212> DNA
<213> Homo sapiens

<400> 27
accatgcgaa ccgccccgag cctccgccgc tgcccgccac cgcctcggcc agtggccgga 60
ggcaggagcg cgtctgagtt tccccgctgg gtccacagcg ccgagcccac ctacttcctg 120
cgccacagcc gcaccccgag cagtgacggc actgtggaag tacgtgccct gctcacctgg 180
accctcaacc cacagatcga caacgaggcc ctcttcagct gcgaggtcaa gcacccagct 240
ctgtcgatgc ccatgcgggc agaggtcacg ctggttgccc ccaaaggacc caaaattgtg 300
atgatgccca gcagagcccg ggtaggggac acagtgagga ttctggtcca tgggtttcag 360
aacgaagtct tcccggagcc catgttcacg tggacgcggg ttgggagccg cctcctggac 420
ggcagcgctg agttcgacgg gaaggagctg gtgctggagc gggttcccgc cgagctcaat 480
ggctccatgt atcgctgcac cgcccagaac ccactgggct ccactgacac gcacacccgg 540
ctcatcgtgt ttgaaaaccc aaatatccca agaggaacgg aggactctaa tggttccatt 600
gcccccactg gtgcccggct caccttggtg ctcgccctga cagtgattct ggagctgacg 660
tgatgacagt gattctggag ct 682

<210> 28
<211> 219
<212> PRT
<213> Homo sapiens

<400> 28
Met Arg Thr Ala Pro Ser Leu Arg Arg Cys Pro Pro Pro Pro Arg Pro
1 5 10 15

Val Ala Gly Gly Arg Ser Ala Ser Glu Phe Pro Arg Trp Val His Ser
20 25 30

Ala Glu Pro Thr Tyr Phe Leu Arg His Ser Arg Thr Pro Ser Ser Asp
35 40 45

Gly Thr Val Glu Val Arg Ala Leu Leu Thr Trp Thr Leu Asn Pro Gln
50 55 60

Ile Asp Asn Glu Ala Leu Phe Ser Cys Glu Val Lys His Pro Ala Leu
65 70 75 80

Ser Met Pro Met Arg Ala Glu Val Thr Leu Val Ala Pro Lys Gly Pro
85 90 95

Lys Ile Val Met Met Pro Ser Arg Ala Arg Val Gly Asp Thr Val Arg
100 105 110

Ile Leu Val His Gly Phe Gln Asn Glu Val Phe Pro Glu Pro Met Phe
115 120 125

Thr Trp Thr Arg Val Gly Ser Arg Leu Leu Asp Gly Ser Ala Glu Phe
130 135 140

Asp Gly Lys Glu Leu Val Leu Glu Arg Val Pro Ala Glu Leu Asn Gly
145 150 155 160

```
Ser Met Tyr Arg Cys Thr Ala Gln Asn Pro Leu Gly Ser Thr Asp Thr
                165                 170                 175

His Thr Arg Leu Ile Val Phe Glu Asn Pro Asn Ile Pro Arg Gly Thr
            180                 185                 190

Glu Asp Ser Asn Gly Ser Ile Ala Pro Thr Gly Ala Arg Leu Thr Leu
        195                 200                 205

Val Leu Ala Leu Thr Val Ile Leu Glu Leu Thr
    210                 215
```

<210> 29
<211> 992
<212> DNA
<213> Homo sapiens

<400> 29
accatgcgaa ccgccccgag cctccgccgc tgcgtctgcc tgctgctcgc cgcgatcctg 60
gacctggcgc gcggctacct gacagtcaac attgagcctc tccccctgt ggtggctgga 120
gacgccgtga ctttgaagtg taacttcaag acagatgggc gcatgcggga gatcgtgtgg 180
taccgggtga cggatggtgg caccatcaag caaaagatct tcaccttcga cgccatgttc 240
tccaccaact actcacacat ggagaactac cgcaagcgag aggacctggt gtaccagtcc 300
actgtgaggc tgcccgaggt ccggatctca gacaatggtc cctatgagtg ccatgtgggc 360
atctacgacc gcgccaccag ggagaaggtg gtcctggcat caggcaacat cttcctcaac 420
gtcatggttg cccccaaagg acccaaaatt gtgatgacgc ccagcagagc ccgggtaggg 480
gacacagtga ggattctggt ccatgggttt cagaacgaag tcttcccgga gcccatgttc 540
acgtggacgc gggttgggag ccgcctcctg gacggcagcg ctgagttcga cgggaaggag 600
ctggtgctgg agcgggttcc cgccgagctc aatggctcca tgtatcgctg caccgccccg 660
aacccactgg gctccaccga cacgcacacc cggctcatcg tgtttgaaaa cccaaatatc 720
ccaagaggaa cggaggactc taatggttcc attggcccca ctggtgcccg gctcaccttg 780
gtgctcgccc tgacagtgat tctggagctg acgtgaagac agtgattctg gagctgacgt 840
gacagtgatt ctggagctga cgtgatgaca gtgattctgg agctgacgtg atgacagtga 900
ttctggagct gacgtgatga cagtgattct ggagctgacg tgatgacagt gattctggag 960
ctgacgtgat gacagtgatt ctggagctga cg   992

<210> 30
<211> 270
<212> PRT
<213> Homo sapiens

<400> 30
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Met Arg Thr Ala Pro Ser Leu Arg Arg Cys Val Cys Leu Leu Leu Ala
  1               5                  10                  15

Ala Ile Leu Asp Leu Ala Arg Gly Tyr Leu Thr Val Asn Ile Glu Pro
            20                  25                  30

Leu Pro Pro Val Val Ala Gly Asp Ala Val Thr Leu Lys Cys Asn Phe
        35                  40                  45

Lys Thr Asp Gly Arg Met Arg Glu Ile Val Trp Tyr Arg Val Thr Asp
    50                  55                  60
```

```
Gly Gly Thr Ile Lys Gln Lys Ile Phe Thr Phe Asp Ala Met Phe Ser
 65                  70                  75                  80

Thr Asn Tyr Ser His Met Glu Asn Tyr Arg Lys Arg Glu Asp Leu Val
                 85                  90                  95

Tyr Gln Ser Thr Val Arg Leu Pro Glu Val Arg Ile Ser Asp Asn Gly
            100                 105                 110

Pro Tyr Glu Cys His Val Gly Ile Tyr Asp Arg Ala Thr Arg Glu Lys
        115                 120                 125

Val Val Leu Ala Ser Gly Asn Ile Phe Leu Asn Val Met Val Ala Pro
    130                 135                 140

Lys Gly Pro Lys Ile Val Met Thr Pro Ser Arg Ala Arg Val Gly Asp
145                 150                 155                 160

Thr Val Arg Ile Leu Val His Gly Phe Gln Asn Glu Val Phe Pro Glu
                165                 170                 175

Pro Met Phe Thr Trp Thr Arg Val Gly Ser Arg Leu Leu Asp Gly Ser
            180                 185                 190

Ala Glu Phe Asp Gly Lys Glu Leu Val Leu Glu Arg Val Pro Ala Glu
        195                 200                 205

Leu Asn Gly Ser Met Tyr Arg Cys Thr Ala Pro Asn Pro Leu Gly Ser
    210                 215                 220

Thr Asp Thr His Thr Arg Leu Ile Val Phe Glu Asn Pro Asn Ile Pro
225                 230                 235                 240

Arg Gly Thr Glu Asp Ser Asn Gly Ser Ile Gly Pro Thr Gly Ala Arg
                245                 250                 255

Leu Thr Leu Val Leu Ala Leu Thr Val Ile Leu Glu Leu Thr
            260                 265                 270
```

<210> 31
<211> 1341
<212> DNA
<213> Homo sapiens

<400> 31
ggatcctacc tgacagtcaa cattgagcct ctccccccctg tggtggctgg agacgccgtg 60
actttgaagt gtaacttcaa gacagatggg cgcatgcggg agatcgtgtg gtaccgggtg 120
acggatggtg gcaccatcaa gcaaaagatc ttcaccttcg acgccatgtt ctccaccaac 180
tactcacaca tggagaacta ccgcaagcga gaggacctgg tgtaccagtc cactgtgagg 240
ctgcccgagg tccggatctc agacaatggt ccctatgagt gccatgtggg catctacgac 300
cgcgccacca gggagaaggt ggtcctggca tcaggcaaca tcttcctcaa cgtcatggct 360
cctcccacct ccattgaagt ggtggctgct gacacaccag ccccccttcag ccgctaccaa 420
gcccagaact tcacgctggt ctgcatcgtg tctggaggaa aaccagcacc catggtttat 480
ttcaaacgag atggggaacc aatcgacgca gtgcccctat cagagccacc agctgcgagc 540
tccggccccc tacaggacag caggcccttc cgcagccttc tgcaccgtga cctggatgac 600
accaagatgc agaagtcact gtccctcctg gacgccgaga accggggtgg gcgaccctac 660

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acggagcgcc cctcccgtgg cctgacccca gatcccaaca tcctcctcca gccaaccaca 720
gagaacatac cagagacggt cgtgagccgt gagtttcccc gctgggtcca cagcgccgag 780
cccacctact tcctgcgcca cagccgcacc ccgagcagtg acggcactgt ggaagtacgt 840
gccctgctca cctggaccct caacccacag atcgacaacg aggccctctt cagctgcgag 900
gtcaagcacc cagctctgtc gatgcccatg caggcagagg tcacgctggt tgcccccaaa 960
ggacccaaaa ttgtgatgac gcccagcaga gcccgggtag gggacacagt gaggattctg 1020
gtccatgggt ttcagaacga agtcttcccg gagcccatgt tcacgtggac gcgggttggg 1080
agccgcctcc tggacggcag cgctgagttc gacgggaagg agctggtgct ggagcgggtt 1140
cccgccgagc tcaatggctc catgtatcgc tgcaccgccc agaacccact gggctccacc 1200
gacacgcaca cccggctcat cgtgtttgaa aacccaaata tcccaagagg aacggaggac 1260
tctaatggtt ccattggccc cactggtgcc cggctcacct tggtgctcgc cctgacagtg 1320
attctggagc tgacgctcga g                                          1341


<210> 32
<211> 447
<212> PRT
<213> Homo sapiens

<400> 32
Gly Ser Tyr Leu Thr Val Asn Ile Glu Pro Leu Pro Pro Val Val Ala
  1               5                  10                  15

Gly Asp Ala Val Thr Leu Lys Cys Asn Phe Lys Thr Asp Gly Arg Met
             20                  25                  30

Arg Glu Ile Val Trp Tyr Arg Val Thr Asp Gly Gly Thr Ile Lys Gln
         35                  40                  45

Lys Ile Phe Thr Phe Asp Ala Met Phe Ser Thr Asn Tyr Ser His Met
     50                  55                  60

Glu Asn Tyr Arg Lys Arg Glu Asp Leu Val Tyr Gln Ser Thr Val Arg
 65                  70                  75                  80

Leu Pro Glu Val Arg Ile Ser Asp Asn Gly Pro Tyr Glu Cys His Val
                 85                  90                  95

Gly Ile Tyr Asp Arg Ala Thr Arg Glu Lys Val Val Leu Ala Ser Gly
            100                 105                 110

Asn Ile Phe Leu Asn Val Met Ala Pro Pro Thr Ser Ile Glu Val Val
        115                 120                 125

Ala Ala Asp Thr Pro Ala Pro Phe Ser Arg Tyr Gln Ala Gln Asn Phe
    130                 135                 140

Thr Leu Val Cys Ile Val Ser Gly Gly Lys Pro Ala Pro Met Val Tyr
145                 150                 155                 160

Phe Lys Arg Asp Gly Glu Pro Ile Asp Ala Val Pro Leu Ser Glu Pro
                165                 170                 175

Pro Ala Ala Ser Ser Gly Pro Leu Gln Asp Ser Arg Pro Phe Arg Ser
            180                 185                 190

Leu Leu His Arg Asp Leu Asp Asp Thr Lys Met Gln Lys Ser Leu Ser
```

```
        195                 200                 205

Leu Leu Asp Ala Glu Asn Arg Gly Gly Arg Pro Tyr Thr Glu Arg Pro
    210                 215                 220

Ser Arg Gly Leu Thr Pro Asp Pro Asn Ile Leu Leu Gln Pro Thr Thr
225                 230                 235                 240

Glu Asn Ile Pro Glu Thr Val Val Ser Arg Glu Phe Pro Arg Trp Val
                245                 250                 255

His Ser Ala Glu Pro Thr Tyr Phe Leu Arg His Ser Arg Thr Pro Ser
            260                 265                 270

Ser Asp Gly Thr Val Glu Val Arg Ala Leu Leu Thr Trp Thr Leu Asn
        275                 280                 285

Pro Gln Ile Asp Asn Glu Ala Leu Phe Ser Cys Glu Val Lys His Pro
    290                 295                 300

Ala Leu Ser Met Pro Met Gln Ala Glu Val Thr Leu Val Ala Pro Lys
305                 310                 315                 320

Gly Pro Lys Ile Val Met Thr Pro Ser Arg Ala Arg Val Gly Asp Thr
                325                 330                 335

Val Arg Ile Leu Val His Gly Phe Gln Asn Glu Val Phe Pro Glu Pro
            340                 345                 350

Met Phe Thr Trp Thr Arg Val Gly Ser Arg Leu Leu Asp Gly Ser Ala
        355                 360                 365

Glu Phe Asp Gly Lys Glu Leu Val Leu Glu Arg Val Pro Ala Glu Leu
    370                 375                 380

Asn Gly Ser Met Tyr Arg Cys Thr Ala Gln Asn Pro Leu Gly Ser Thr
385                 390                 395                 400

Asp Thr His Thr Arg Leu Ile Val Phe Glu Asn Pro Asn Ile Pro Arg
                405                 410                 415

Gly Thr Glu Asp Ser Asn Gly Ser Ile Gly Pro Thr Gly Ala Arg Leu
            420                 425                 430

Thr Leu Val Leu Ala Leu Thr Val Ile Leu Glu Leu Thr Leu Glu
        435                 440                 445
```

<210> 33
<211> 702
<212> DNA
<213> Homo sapiens

<400> 33
ggatcctacc tgacagtcaa cattgagcct ctccccccctg tggtggctgg agacgccgtg 60
actttgaagt gtaacttcaa gacagatggg cgcatgcggg agatcgtgtg gtaccgggtg 120
acggatggtg gcaccatcaa gcaaaagatc ttcaccttcg acgccatgtt ctccaccaac 180

tactcacaca tggagaacta ccgcaagcga gaggacctgg tgtaccagtc cactgtgagg 240
ctgcccgagg tccggatctc agacaatggt ccctatgagt gccatgtggg catctacgac 300
cgcgccacca gggagaaggt ggtcctggca tcaggcaaca tcttcctcaa cgtcatggtt 360
gcccccaaag gacccaaaat tgtgatgacg cccagcagag cccgggtagg ggacacagtg 420
aggattctgg tccatgggtt tcagaacgaa gtcttcccgg agcccatgtt cacgtggacg 480
cgggttggga gccgcctcct ggacggcagc gctgagttcg acgggaagga gctggtgctg 540
gagcgggttc ccgccgagct caatggctcc atgtatcgct gcaccgccca gaacccactg 600
ggctccaccg acacgcacac ccggctcatc gtgtttgaaa acccaaatat cccaagagga 660
acggaggact ctaatggttc cattggcccc actggtctcg ag 702

<210> 34
<211> 234
<212> PRT
<213> Homo sapiens

<400> 34
Gly Ser Tyr Leu Thr Val Asn Ile Glu Pro Leu Pro Pro Val Val Ala
1 5 10 15

Gly Asp Ala Val Thr Leu Lys Cys Asn Phe Lys Thr Asp Gly Arg Met
20 25 30

Arg Glu Ile Val Trp Tyr Arg Val Thr Asp Gly Gly Thr Ile Lys Gln
35 40 45

Lys Ile Phe Thr Phe Asp Ala Met Phe Ser Thr Asn Tyr Ser His Met
50 55 60

Glu Asn Tyr Arg Lys Arg Glu Asp Leu Val Tyr Gln Ser Thr Val Arg
65 70 75 80

Leu Pro Glu Val Arg Ile Ser Asp Asn Gly Pro Tyr Glu Cys His Val
85 90 95

Gly Ile Tyr Asp Arg Ala Thr Arg Glu Lys Val Val Leu Ala Ser Gly
100 105 110

Asn Ile Phe Leu Asn Val Met Val Ala Pro Lys Gly Pro Lys Ile Val
115 120 125

Met Thr Pro Ser Arg Ala Arg Val Gly Asp Thr Val Arg Ile Leu Val
130 135 140

His Gly Phe Gln Asn Glu Val Phe Pro Glu Pro Met Phe Thr Trp Thr
145 150 155 160

Arg Val Gly Ser Arg Leu Leu Asp Gly Ser Ala Glu Phe Asp Gly Lys
165 170 175

Glu Leu Val Leu Glu Arg Val Pro Ala Glu Leu Asn Gly Ser Met Tyr
180 185 190

Arg Cys Thr Ala Gln Asn Pro Leu Gly Ser Thr Asp Thr His Thr Arg
195 200 205

Leu Ile Val Phe Glu Asn Pro Asn Ile Pro Arg Gly Thr Glu Asp Ser

210 215 220

Asn Gly Ser Ile Gly Pro Thr Gly Leu Glu
225 230

<210> 35
<211> 1446
<212> DNA
<213> Homo sapiens

<400> 35
gcggaacaaa ctggaaagct gaccgaattt gtgtctaacc tggcgtggga tttcgcagtc 60
aaagaagggt tccgggtttt caaagagatg cccttcacaa atccgttaac aaggtcctac 120
cacacgtggg ccaggcccca gtcccagtgg tgccccacag gcagcaggag ttatagctcc 180
gttccagaag cttccccagc tcatacctca aggggaggtc tggttatctc tccagagagc 240
ctctctccac ctgtcagaga gctgtatcac cggctgaagc acttcatgga gcaacgtgtg 300
taccctgcag agccagagct gcagagtcac caggcctcag cagccaggtg gagcccctcc 360
ccactgatcg aagacctcaa ggagaaagcc aaagctgaag gactttggaa ccttttccta 420
cccttagagg ctgatcccga gaaaaaatac ggagcaggac tgaccaatgt ggaatatgca 480
catctgtgtg agctcatggg cacgtccctg tatgcccccg aggtatgtaa ctgctctgcg 540
cctgacacgg gcaacatgga gctgctggtg aggtatggca ccgaagcgca gaaggctcgc 600
tggctgattc ctctgctgga ggggaaagcc cgctcctgtt ttgctatgac cgagccccag 660
gttgcctctt cagatgccac caacattgag gcttccatca gagaggagga cagcttctat 720
gtcataaacg gtcacaaatg gtggatcaca ggcatcctgg atcctcgttg ccaactctgt 780
gtgtttatgg gaaaaacaga cccacatgca ccaagacacc ggcagcagtc tgtgctcttg 840
gttcccatgg ataccccagg gataaaaatc atccggcctc tgacggtgta tggactggaa 900
gatgcaccag gtggccatgg tgaagtccga tttgagcacg tgcgtgtgcc caaagagaac 960
atggtcctgg gccctggccg aggctttgag atcgcccagg gcagactggg ccccggcagg 1020
atccatcact gcatgaggct gatcgggttc tcagagaggg ccctggcact catgaaggcc 1080
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cacctcatgg acctggcagg aaacaaggct gcagccttgg atatagccat gattaaaatg 1260
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<210> 36
<211> 452
<212> PRT
<213> Homo sapiens

<400> 36
Met Pro Phe Thr Asn Pro Leu Thr Arg Ser Tyr His Thr Trp Ala Arg
1 5 10 15

Pro Gln Ser Gln Trp Cys Pro Thr Gly Ser Arg Ser Tyr Ser Ser Val
20 25 30

Pro Glu Ala Ser Pro Ala His Thr Ser Arg Gly Gly Leu Val Ile Ser
35 40 45

Pro Glu Ser Leu Ser Pro Pro Val Arg Glu Leu Tyr His Arg Leu Lys
50 55 60

```
His Phe Met Glu Gln Arg Val Tyr Pro Ala Glu Pro Glu Leu Gln Ser
 65                  70                  75                  80

His Gln Ala Ser Ala Ala Arg Trp Ser Pro Ser Pro Leu Ile Glu Asp
                 85                  90                  95

Leu Lys Glu Lys Ala Lys Ala Glu Gly Leu Trp Asn Leu Phe Leu Pro
            100                 105                 110

Leu Glu Ala Asp Pro Glu Lys Lys Tyr Gly Ala Gly Leu Thr Asn Val
        115                 120                 125

Glu Tyr Ala His Leu Cys Glu Leu Met Gly Thr Ser Leu Tyr Ala Pro
    130                 135                 140

Glu Val Cys Asn Cys Ser Ala Pro Asp Thr Gly Asn Met Glu Leu Leu
145                 150                 155                 160

Val Arg Tyr Gly Thr Glu Ala Gln Lys Ala Arg Trp Leu Ile Pro Leu
                165                 170                 175

Leu Glu Gly Lys Ala Arg Ser Cys Phe Ala Met Thr Glu Pro Gln Val
            180                 185                 190

Ala Ser Ser Asp Ala Thr Asn Ile Glu Ala Ser Ile Arg Glu Glu Asp
        195                 200                 205

Ser Phe Tyr Val Ile Asn Gly His Lys Trp Trp Ile Thr Gly Ile Leu
    210                 215                 220

Asp Pro Arg Cys Gln Leu Cys Val Phe Met Gly Lys Thr Asp Pro His
225                 230                 235                 240

Ala Pro Arg His Arg Gln Gln Ser Val Leu Leu Val Pro Met Asp Thr
                245                 250                 255

Pro Gly Ile Lys Ile Ile Arg Pro Leu Thr Val Tyr Gly Leu Glu Asp
            260                 265                 270

Ala Pro Gly Gly His Gly Glu Val Arg Phe Glu His Val Arg Val Pro
        275                 280                 285

Lys Glu Asn Met Val Leu Gly Pro Gly Arg Gly Phe Glu Ile Ala Gln
    290                 295                 300

Gly Arg Leu Gly Pro Gly Arg Ile His His Cys Met Arg Leu Ile Gly
305                 310                 315                 320

Phe Ser Glu Arg Ala Leu Ala Leu Met Lys Ala Arg Val Lys Ser Arg
                325                 330                 335

Leu Ala Phe Gly Lys Pro Leu Val Glu Gln Gly Thr Val Leu Ala Asp
            340                 345                 350

Ile Ala Gln Ser Arg Val Glu Ile Glu Gln Ala Arg Leu Leu Val Leu
        355                 360                 365
```

```
Arg Ala Ala His Leu Met Asp Leu Ala Gly Asn Lys Ala Ala Ala Leu
    370                 375                 380

Asp Ile Ala Met Ile Lys Met Val Ala Pro Ser Met Ala Ser Arg Val
385                 390                 395                 400

Ile Asp Arg Ala Ile Gln Ala Phe Gly Ala Ala Gly Leu Ser Ser Asp
                405                 410                 415

Tyr Pro Leu Ala Gln Phe Phe Thr Trp Ala Arg Ala Leu Arg Phe Ala
            420                 425                 430

Asp Gly Pro Asp Glu Val His Arg Ala Thr Val Ala Lys Leu Glu Leu
        435                 440                 445

Lys His Arg Ile
    450
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<210> 37
<211> 1363
<212> DNA
<213> Homo sapiens

<400> 37
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ccagtggtgc cccacaggca gcaggagtta tagctccgtt ccagaagctt ccccagctca 120
tacctcaagg ggaggtctgg ttatctctcc agagagcctc tctccacctg tcagagagct 180
gtatcaccgg ctgaagcact tcatggagca acgtgtgtac cctgcagagc cagagctgca 240
gagtcaccag gcctcagcag ccaggtggag cccctcccca ctgatcgaag acctcaagga 300
gaaagccaaa gctgaaggac tttggaacct tttcctaccc ttagaggctg atcccgagaa 360
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gtccctgtat gcccccgagg tatgtaactg ctctgcgcct gacacgggca acatggagct 480
gctggtgagg tatggcaccg aagcgcagaa ggctcgctgg ctgattcctc tgctggaggg 540
gaaagcccgc tcctgttttg ctatgaccga gccccaggtt gcctcttcag atgccaccaa 600
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<210> 38
<211> 452
<212> PRT
<213> Homo sapiens

<400> 38
Met Pro Phe Thr Asn Pro Leu Thr Arg Ser Tyr His Thr Trp Ala Arg

```
  1               5                  10                  15

Pro Gln Ser Gln Trp Cys Pro Thr Gly Ser Arg Ser Tyr Ser Ser Val
            20                  25                  30

Pro Glu Ala Ser Pro Ala His Thr Ser Arg Gly Gly Leu Val Ile Ser
        35                  40                  45

Pro Glu Ser Leu Ser Pro Pro Val Arg Glu Leu Tyr His Arg Leu Lys
    50                  55                  60

His Phe Met Glu Gln Arg Val Tyr Pro Ala Glu Pro Glu Leu Gln Ser
65                  70                  75                  80

His Gln Ala Ser Ala Ala Arg Trp Ser Pro Ser Pro Leu Ile Glu Asp
                85                  90                  95

Leu Lys Glu Lys Ala Lys Ala Glu Gly Leu Trp Asn Leu Phe Leu Pro
            100                 105                 110

Leu Glu Ala Asp Pro Glu Lys Lys Tyr Gly Ala Gly Leu Thr Asn Val
        115                 120                 125

Glu Tyr Ala His Leu Cys Glu Leu Met Gly Thr Ser Leu Tyr Ala Pro
    130                 135                 140

Glu Val Cys Asn Cys Ser Ala Pro Asp Thr Gly Asn Met Glu Leu Leu
145                 150                 155                 160

Val Arg Tyr Gly Thr Glu Ala Gln Lys Ala Arg Trp Leu Ile Pro Leu
                165                 170                 175

Leu Glu Gly Lys Ala Arg Ser Cys Phe Ala Met Thr Glu Pro Gln Val
            180                 185                 190

Ala Ser Ser Asp Ala Thr Asn Ile Glu Ala Ser Ile Arg Glu Glu Asp
        195                 200                 205

Ser Phe Tyr Val Ile Asn Gly His Lys Trp Trp Ile Thr Gly Ile Leu
    210                 215                 220

Asp Pro Arg Cys Gln Leu Cys Val Phe Met Gly Lys Thr Asp Pro His
225                 230                 235                 240

Ala Pro Arg His Arg Gln Gln Ser Val Leu Leu Val Pro Met Asp Thr
                245                 250                 255

Pro Gly Ile Lys Ile Ile Arg Pro Leu Thr Val Tyr Gly Leu Glu Asp
            260                 265                 270

Ala Pro Gly Gly His Gly Glu Val Arg Phe Glu His Val Arg Val Pro
        275                 280                 285

Lys Glu Asn Met Val Leu Gly Pro Gly Arg Gly Phe Glu Ile Ala Gln
    290                 295                 300

Gly Arg Leu Gly Pro Gly Arg Ile His His Cys Met Arg Leu Ile Gly
```

```
305                 310                 315                 320

Phe Ser Glu Arg Ala Leu Ala Leu Met Lys Ala Arg Val Lys Ser Arg
                325                 330                 335

Leu Ala Phe Gly Lys Pro Leu Val Glu Gln Gly Thr Val Leu Ala Asp
            340                 345                 350

Ile Ala Gln Ser Arg Val Glu Ile Glu Gln Ala Arg Leu Leu Val Leu
        355                 360                 365

Arg Ala Ala His Leu Met Asp Leu Ala Gly Asn Lys Ala Ala Ala Leu
    370                 375                 380

Asp Ile Ala Met Ile Lys Met Val Ala Pro Ser Met Ala Ser Arg Val
385                 390                 395                 400

Ile Asp Arg Ala Ile Gln Ala Phe Gly Ala Ala Gly Leu Ser Ser Asp
                405                 410                 415

Tyr Pro Leu Ala Gln Phe Phe Thr Trp Ala Arg Ala Leu Arg Phe Ala
            420                 425                 430

Asp Gly Pro Asp Glu Val His Arg Thr Thr Val Ala Lys Leu Glu Leu
        435                 440                 445

Lys His Arg Ile
    450
```

<210> 39
<211> 1380
<212> DNA
<213> Homo sapiens

<400> 39

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gcggaacaaa ctggaaagct gaccgaattt gtgtctaacc tggcgtggga tttcgcagtc 60
aaagaagggt tccgggtttt caaagagatg cccttcacaa atccgttaac aaggtcctac 120
cacacgtggg ccaggcccca gtcccagtgg tgccccacag gcagcaggag ttatagctcc 180
gttccagaag cttccccagc tcatacctca aggggaggtc tggttatctc tccagagagc 240
ctctctccac ctgtcagaga gctgtatcac cggctgaagc acttcatgga gcaacgtgtg 300
taccctgcag agccagagct gcagagtcac caggcctcag cagccaggtg gagcccctcc 360
ccactgatcg aagacctcaa ggagaaagcc aaagctgaag gactttggaa ccttttccta 420
cccttagagg ctgatcccga gaaaaaatac ggagcaggac tgaccaatgt ggaatatgca 480
catctgtgtg agctcatggg cacgtccctg tatgcccccg aggtatgtaa ctgctctgcg 540
cctgacacgg gcaacatgga gctgctggtg aggtatggca ccgaagcgca gaaggctcgc 600
tggctgattc ctctgctgga ggggaaagcc cgctcctgtt ttgctatgac cgagccccag 660
gttgcctctt cagatgccac caacattgag gcttccatca gagaggagga cagcttctat 720
gtcataaacg gtcacaaatg gtggatcaca ggcatcctgg atcctcgttg ccaactctgt 780
gtgtttatgg gaaaaacaga cccacatgca ccaagacacc ggcagcagtc tgtgctcgtg 840
gttcccatgg ataccccagg gataaaaatc atccggcctc tgacggtgta tggactggaa 900
gatgcaccag gtggccatgg tgaagtccga tttgagcacg tgcgtgtgcc caaagagaac 960
atggtcctgg gccctggccg aggctttgag atcgcccagg gcagactggg ccccggcagg 1020
atccatcact gcatgaggct gatcgggttg tcagagaggg ccatggcact catgaaggcc 1080
cgcgctgcag cattggatat agccatgatt aaaatggtcg ccccgtccat ggcctcccga 1140
gtgattgatc gtgcgattca ggcctttgga gcagcaggct tgagcagcga atacccactg 1200
gctcattttt tcacatgggc ccgagccctg cgctttgcgg acggtcctga cgaggtgcac 1260
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cgggccacgg tggccaagct agagctgaag caccgcattt agagccttgg ggctgcagtg 1320
gctcaatgtc ctggctggtc cagctgtgcc cagatctgtc actgatgtgc ctcgaaagat 1380

<210> 40
<211> 404
<212> PRT
<213> Homo sapiens

<400> 40

Met	Pro	Phe	Thr	Asn	Pro	Leu	Thr	Arg	Ser	Tyr	His	Thr	Trp	Ala	Arg
1				5				10						15	
Pro	Gln	Ser	Gln	Trp	Cys	Pro	Thr	Gly	Ser	Arg	Ser	Tyr	Ser	Ser	Val
			20					25					30		
Pro	Glu	Ala	Ser	Pro	Ala	His	Thr	Ser	Arg	Gly	Gly	Leu	Val	Ile	Ser
		35					40					45			
Pro	Glu	Ser	Leu	Ser	Pro	Pro	Val	Arg	Glu	Leu	Tyr	His	Arg	Leu	Lys
	50					55					60				
His	Phe	Met	Glu	Gln	Arg	Val	Tyr	Pro	Ala	Glu	Pro	Glu	Leu	Gln	Ser
65					70					75					80
His	Gln	Ala	Ser	Ala	Ala	Arg	Trp	Ser	Pro	Ser	Pro	Leu	Ile	Glu	Asp
				85					90					95	
Leu	Lys	Glu	Lys	Ala	Lys	Ala	Glu	Gly	Leu	Trp	Asn	Leu	Phe	Leu	Pro
			100					105					110		
Leu	Glu	Ala	Asp	Pro	Glu	Lys	Lys	Tyr	Gly	Ala	Gly	Leu	Thr	Asn	Val
		115					120					125			
Glu	Tyr	Ala	His	Leu	Cys	Glu	Leu	Met	Gly	Thr	Ser	Leu	Tyr	Ala	Pro
	130					135					140				
Glu	Val	Cys	Asn	Cys	Ser	Ala	Pro	Asp	Thr	Gly	Asn	Met	Glu	Leu	Leu
145					150					155					160
Val	Arg	Tyr	Gly	Thr	Glu	Ala	Gln	Lys	Ala	Arg	Trp	Leu	Ile	Pro	Leu
				165					170					175	
Leu	Glu	Gly	Lys	Ala	Arg	Ser	Cys	Phe	Ala	Met	Thr	Glu	Pro	Gln	Val
			180					185					190		
Ala	Ser	Ser	Asp	Ala	Thr	Asn	Ile	Glu	Ala	Ser	Ile	Arg	Glu	Glu	Asp
		195					200					205			
Ser	Phe	Tyr	Val	Ile	Asn	Gly	His	Lys	Trp	Trp	Ile	Thr	Gly	Ile	Leu
	210					215					220				
Asp	Pro	Arg	Cys	Gln	Leu	Cys	Val	Phe	Met	Gly	Lys	Thr	Asp	Pro	His
225					230					235					240
Ala	Pro	Arg	His	Arg	Gln	Gln	Ser	Val	Leu	Val	Val	Pro	Met	Asp	Thr
				245					250					255	

```
Pro Gly Ile Lys Ile Ile Arg Pro Leu Thr Val Tyr Gly Leu Glu Asp
            260                 265                 270

Ala Pro Gly Gly His Gly Glu Val Arg Phe Glu His Val Arg Val Pro
        275                 280                 285

Lys Glu Asn Met Val Leu Gly Pro Gly Arg Gly Phe Glu Ile Ala Gln
    290                 295                 300

Gly Arg Leu Gly Pro Gly Arg Ile His His Cys Met Arg Leu Ile Gly
305                 310                 315                 320

Leu Ser Glu Arg Ala Met Ala Leu Met Lys Ala Arg Ala Ala Ala Leu
                325                 330                 335

Asp Ile Ala Met Ile Lys Met Val Ala Pro Ser Met Ala Ser Arg Val
            340                 345                 350

Ile Asp Arg Ala Ile Gln Ala Phe Gly Ala Ala Gly Leu Ser Ser Glu
        355                 360                 365

Tyr Pro Leu Ala His Phe Phe Thr Trp Ala Arg Ala Leu Arg Phe Ala
    370                 375                 380

Asp Gly Pro Asp Glu Val His Arg Ala Thr Val Ala Lys Leu Glu Leu
385                 390                 395                 400

Lys His Arg Ile
```

<210> 41
<211> 3490
<212> DNA
<213> Homo sapiens

<400> 41

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agttctcatt ccttctccag ggagagtcgc tgcagaatgg gaggtacaga atcgtatccc 180
ttctggaact atattaaagg ccttgatgga aggtggtgaa aatgggccct ggatgagatt 240
tatgagagca gaaataacag cagagggttt tttacgagaa tttgggagac tttgctctga 300
aatgttaaag acctccgtgc ctgtggactc atttttctct ctgttgacca gtgagcgagt 360
ggcaaagcag ttcccagtga tgactgaggc cataactcaa attcgggcaa aaggtcttca 420
gactgcagtc ttgagcaata atttttatct tcccaaccag aaaagctttt tgcccctgga 480
ccggaaacag tttgatgtga ttgtggagtc ctgcatggaa gggatctgta agccagaccc 540
taggatctac aagctgtgct tggagcagct cggcctgcag ccctctgagt ccatctttct 600
tgatgacctt ggaacaaatc taaaagaagc tgccagactt ggtattcaca ccattaaggt 660
taatgaccca gagactgcag taaaggaatt agaagctctc ttgggtttta cattgagagt 720
aggtgttcca aacactcggc ctgtgaaaaa gacgatggaa attccgaaag attccttgca 780
gaagtacctc aaagacttac tgggtatcca gaccacaggc ccattggaac tacttcagtt 840
tgatcacggg cagtcaaatc caacttacta catcaggctg gctaatcgtg atctagttct 900
gaggaagaag cccccaggga cactccttcc atctgcccat gccatagaga gggagttcag 960
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caaagaccct tccctgccag gcttggagcc cagccacaga cgagccatat acactgccat 1140
```

```
gaacacagtc ctgtgcaaaa ttcacagtgt ggatctgcag gctgtgggac ttgaagacta 1200
tgggaagcaa ggggactata ttccacgcca ggtacgaacc tgggttaagc agtatcgagc 1260
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aaaaaaaaaa                                                       3490
```

<210> 42
<211> 1080
<212> PRT
<213> Homo sapiens

<400> 42

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Met Gly Gly Val Leu Ile Pro Ser Pro Gly Arg Val Ala Ala Glu Trp
  1               5                  10                  15

Glu Val Gln Asn Arg Ile Pro Ser Gly Thr Ile Leu Lys Ala Leu Met
             20                  25                  30

Glu Gly Gly Glu Asn Gly Pro Trp Met Arg Phe Met Arg Ala Glu Ile
         35                  40                  45
```

```
Thr Ala Glu Gly Phe Leu Arg Glu Phe Gly Arg Leu Cys Ser Glu Met
     50                  55                  60

Leu Lys Thr Ser Val Pro Val Asp Ser Phe Phe Ser Leu Leu Thr Ser
 65                  70                  75                  80

Glu Arg Val Ala Lys Gln Phe Pro Val Met Thr Glu Ala Ile Thr Gln
                 85                  90                  95

Ile Arg Ala Lys Gly Leu Gln Thr Ala Val Leu Ser Asn Asn Phe Tyr
            100                 105                 110

Leu Pro Asn Gln Lys Ser Phe Leu Pro Leu Asp Arg Lys Gln Phe Asp
        115                 120                 125

Val Ile Val Glu Ser Cys Met Glu Gly Ile Cys Lys Pro Asp Pro Arg
    130                 135                 140

Ile Tyr Lys Leu Cys Leu Glu Gln Leu Gly Leu Gln Pro Ser Glu Ser
145                 150                 155                 160

Ile Phe Leu Asp Asp Leu Gly Thr Asn Leu Lys Glu Ala Ala Arg Leu
                165                 170                 175

Gly Ile His Thr Ile Lys Val Asn Asp Pro Glu Thr Ala Val Lys Glu
            180                 185                 190

Leu Glu Ala Leu Leu Gly Phe Thr Leu Arg Val Gly Val Pro Asn Thr
        195                 200                 205

Arg Pro Val Lys Lys Thr Met Glu Ile Pro Lys Asp Ser Leu Gln Lys
    210                 215                 220

Tyr Leu Lys Asp Leu Leu Gly Ile Gln Thr Thr Gly Pro Leu Glu Leu
225                 230                 235                 240

Leu Gln Phe Asp His Gly Gln Ser Asn Pro Thr Tyr Tyr Ile Arg Leu
                245                 250                 255

Ala Asn Arg Asp Leu Val Leu Arg Lys Lys Pro Pro Gly Thr Leu Leu
            260                 265                 270

Pro Ser Ala His Ala Ile Glu Arg Glu Phe Arg Ile Met Lys Ala Leu
        275                 280                 285

Ala Asn Ala Gly Val Pro Val Pro Asn Val Leu Asp Leu Cys Glu Asp
    290                 295                 300

Ser Ser Val Ile Gly Thr Pro Phe Tyr Val Met Glu Tyr Cys Pro Gly
305                 310                 315                 320

Leu Ile Tyr Lys Asp Pro Ser Leu Pro Gly Leu Glu Pro Ser His Arg
                325                 330                 335

Arg Ala Ile Tyr Thr Ala Met Asn Thr Val Leu Cys Lys Ile His Ser
            340                 345                 350
```

Val Asp Leu Gln Ala Val Gly Leu Glu Asp Tyr Gly Lys Gln Gly Asp
355 360 365

Tyr Ile Pro Arg Gln Val Arg Thr Trp Val Lys Gln Tyr Arg Ala Ser
370 375 380

Glu Thr Ser Thr Ile Pro Ala Met Glu Arg Leu Ile Glu Trp Leu Pro
385 390 395 400

Leu His Leu Pro Arg Gln Gln Arg Thr Thr Val Val His Gly Asp Phe
405 410 415

Arg Leu Asp Asn Leu Val Phe His Pro Glu Glu Pro Glu Val Leu Ala
420 425 430

Val Leu Asp Trp Glu Leu Ser Thr Leu Gly Asp Pro Leu Ala Asp Val
435 440 445

Ala Tyr Ser Cys Leu Ala His Tyr Leu Pro Ser Ser Phe Pro Val Leu
450 455 460

Arg Gly Ile Asn Asp Cys Asp Leu Thr Gln Leu Gly Ile Pro Ala Ala
465 470 475 480

Glu Glu Tyr Phe Arg Met Tyr Cys Leu Gln Met Gly Leu Pro Pro Thr
485 490 495

Glu Asn Trp Asn Phe Tyr Met Ala Phe Ser Phe Phe Arg Val Ala Ala
500 505 510

Ile Leu Gln Gly Val Tyr Lys Arg Ser Leu Thr Gly Gln Ala Ser Ser
515 520 525

Thr Tyr Ala Glu Gln Thr Gly Lys Leu Thr Glu Phe Val Ser Asn Leu
530 535 540

Ala Trp Asp Phe Ala Val Lys Glu Gly Phe Arg Val Phe Lys Glu Met
545 550 555 560

Pro Phe Thr Asn Pro Leu Thr Arg Ser Tyr His Thr Trp Ala Arg Pro
565 570 575

Gln Ser Gln Trp Cys Pro Ile Gly Ser Arg Ser Tyr Ser Ser Val Pro
580 585 590

Glu Ala Ser Pro Ala His Thr Ser Arg Gly Gly Leu Val Ile Ser Pro
595 600 605

Glu Ser Leu Ser Pro Pro Val Arg Glu Leu Tyr His Arg Leu Lys His
610 615 620

Phe Met Glu Gln Arg Val Tyr Pro Ala Glu Pro Glu Leu Gln Ser His
625 630 635 640

Gln Ala Ser Ala Ala Arg Trp Ser Pro Ser Pro Leu Ile Glu Asp Leu
645 650 655

```
Lys Glu Lys Ala Lys Ala Glu Gly Leu Trp Asn Leu Phe Leu Pro Leu
            660                 665                 670

Glu Ala Asp Pro Glu Lys Lys Tyr Gly Ala Gly Leu Thr Asn Val Glu
        675                 680                 685

Tyr Ala His Leu Cys Glu Leu Met Gly Thr Ser Leu Tyr Ala Pro Glu
    690                 695                 700

Val Cys Asn Cys Ser Ala Pro Asp Thr Gly Asn Met Glu Leu Leu Val
705                 710                 715                 720

Arg Tyr Gly Thr Glu Ala Gln Lys Ala Arg Trp Leu Ile Pro Leu Leu
                725                 730                 735

Glu Gly Lys Ala Arg Ser Cys Phe Ala Met Thr Glu Pro Gln Val Ala
            740                 745                 750

Ser Ser Asp Ala Thr Asn Ile Glu Ala Ser Ile Arg Glu Glu Asp Ser
        755                 760                 765

Phe Tyr Val Ile Asn Gly His Lys Trp Trp Ile Thr Gly Ile Leu Asp
    770                 775                 780

Pro Arg Cys Gln Leu Cys Val Phe Met Gly Lys Thr Asp Pro His Ala
785                 790                 795                 800

Pro Arg His Arg Gln Gln Ser Val Leu Leu Val Pro Met Asp Thr Pro
                805                 810                 815

Gly Ile Lys Ile Ile Arg Pro Leu Thr Val Tyr Gly Leu Glu Asp Ala
            820                 825                 830

Pro Gly Gly His Gly Glu Val Arg Phe Glu His Val Arg Val Pro Lys
        835                 840                 845

Glu Asn Met Val Leu Gly Pro Gly Arg Gly Phe Glu Ile Ala Gln Gly
    850                 855                 860

Arg Leu Gly Pro Gly Arg Ile His His Cys Met Arg Leu Ile Gly Phe
865                 870                 875                 880

Ser Glu Arg Ala Leu Ala Leu Met Lys Ala Arg Val Lys Ser Arg Leu
                885                 890                 895

Ala Phe Gly Lys Pro Leu Val Glu Gln Gly Thr Val Leu Ala Asp Ile
            900                 905                 910

Ala Gln Ser Arg Val Glu Ile Glu Gln Ala Arg Leu Leu Val Leu Arg
        915                 920                 925

Ala Ala His Leu Met Asp Leu Ala Gly Asn Lys Ala Ala Ala Leu Asp
    930                 935                 940

Ile Ala Met Ile Lys Met Val Ala Pro Ser Met Ala Ser Arg Val Ile
945                 950                 955                 960
```

```
Asp Arg Ala Ile Gln Lys Thr Ser Leu Gln Glu Ala Trp Ser Leu Phe
                965                 970                 975

Gln Ala Arg Arg Arg Gly Phe Ala Glu Gly Gln Gly Gly Ser Gly Thr
            980                 985                 990

Glu Ser Gly Lys Leu Val Phe Arg Leu Ser Val Pro Gly Trp Ala Gly
        995                1000                1005

Thr Val Thr Ser Leu Gln Pro Phe Ser Pro Ser Leu Ser Ala Cys Gly
   1010                1015                1020

Asn Leu Asp Thr Phe Trp Glu Ala Ser Gln Gly Cys Gly Thr Cys Leu
1025                1030                1035                1040

Leu Trp Gln Leu Gln Gly Ser Cys Leu Ala Ser Leu Val Ser Arg Gly
               1045                1050                1055

Ala Ala Thr Ala Gly Gly Gly Leu Glu Thr Gln Asp Leu Gly Ala Trp
           1060                1065                1070

Glu Asn Gly Met Gln Pro Thr Leu
       1075                1080


<210> 43
<211> 638
<212> PRT
<213> Homo sapiens

<400> 43
Met Gly Lys Ile Glu Asn Asn Glu Arg Val Ile Leu Asn Val Gly Gly
  1               5                  10                  15

Thr Arg His Glu Thr Tyr Arg Ser Thr Leu Lys Thr Leu Pro Gly Thr
            20                  25                  30

Arg Leu Ala Leu Leu Ala Ser Ser Glu Pro Pro Gly Asp Cys Leu Thr
        35                  40                  45

Thr Ala Gly Asp Lys Leu Gln Pro Ser Pro Pro Pro Leu Ser Pro Pro
    50                  55                  60

Pro Arg Ala Pro Pro Leu Ser Pro Gly Pro Gly Gly Cys Phe Glu Gly
65                  70                  75                  80

Gly Ala Gly Asn Cys Ser Ser Arg Gly Gly Arg Ala Ser Asp His Pro
                85                  90                  95

Gly Gly Gly Arg Glu Phe Phe Phe Asp Arg His Pro Gly Val Phe Ala
            100                 105                 110

Tyr Val Leu Asn Tyr Tyr Arg Thr Gly Lys Leu His Cys Pro Ala Asp
        115                 120                 125

Val Cys Gly Pro Leu Phe Glu Glu Glu Leu Ala Phe Trp Gly Ile Asp
    130                 135                 140
```

```
Glu Thr Asp Val Glu Pro Cys Cys Trp Met Thr Tyr Arg Gln His Arg
145                 150                 155                 160

Asp Ala Glu Glu Ala Leu Asp Ile Phe Glu Thr Pro Asp Leu Ile Gly
                165                 170                 175

Gly Asp Pro Gly Asp Asp Glu Asp Leu Ala Ala Lys Arg Leu Gly Ile
            180                 185                 190

Glu Asp Ala Ala Gly Leu Gly Gly Pro Asp Gly Lys Ser Gly Arg Trp
        195                 200                 205

Arg Arg Leu Gln Pro Arg Met Trp Ala Leu Phe Glu Asp Pro Tyr Ser
    210                 215                 220

Ser Arg Ala Ala Arg Phe Ile Ala Phe Ala Ser Leu Phe Phe Ile Leu
225                 230                 235                 240

Val Ser Ile Thr Thr Phe Cys Leu Glu Thr His Glu Ala Phe Asn Ile
                245                 250                 255

Val Lys Asn Lys Thr Glu Pro Val Ile Asn Gly Thr Ser Val Val Leu
            260                 265                 270

Gln Tyr Glu Ile Glu Thr Asp Pro Ala Leu Thr Tyr Val Glu Gly Val
        275                 280                 285

Cys Val Val Trp Phe Thr Phe Glu Phe Leu Val Arg Ile Val Phe Ser
    290                 295                 300

Pro Asn Lys Leu Glu Phe Ile Lys Asn Leu Leu Asn Ile Ile Asp Phe
305                 310                 315                 320

Val Ala Ile Leu Pro Phe Tyr Leu Glu Val Gly Leu Ser Gly Leu Ser
                325                 330                 335

Ser Lys Ala Ala Lys Asp Val Leu Gly Phe Leu Arg Val Val Arg Phe
            340                 345                 350

Val Arg Ile Leu Arg Ile Phe Lys Leu Thr Arg His Phe Val Gly Leu
        355                 360                 365

Arg Val Leu Gly His Thr Leu Arg Ala Ser Thr Asn Glu Phe Leu Leu
    370                 375                 380

Leu Ile Ile Phe Leu Ala Leu Gly Val Leu Ile Phe Ala Thr Met Ile
385                 390                 395                 400

Tyr Tyr Ala Glu Arg Val Gly Ala Gln Pro Asn Asp Pro Ser Ala Ser
                405                 410                 415

Glu His Thr Gln Phe Lys Asn Ile Pro Ile Gly Phe Trp Trp Ala Val
            420                 425                 430

Val Thr Met Thr Thr Leu Gly Tyr Gly Asp Met Tyr Pro Gln Thr Trp
        435                 440                 445
```

```
Ser Gly Met Leu Val Gly Ala Leu Cys Ala Leu Ala Gly Val Leu Thr
    450                 455                 460

Ile Ala Met Pro Val Pro Val Ile Val Asn Asn Phe Gly Met Tyr Tyr
465                 470                 475                 480

Ser Leu Ala Met Ala Lys Gln Lys Leu Pro Arg Lys Arg Lys Lys His
                485                 490                 495

Ile Pro Pro Ala Pro Gln Ala Ser Ser Pro Thr Phe Cys Lys Thr Glu
            500                 505                 510

Leu Asn Met Ala Cys Asn Ser Thr Gln Ser Asp Thr Cys Leu Gly Lys
        515                 520                 525

Asp Asn Arg Leu Leu Glu His Asn Arg Ser Val Leu Ser Gly Asp Asp
    530                 535                 540

Ser Thr Gly Ser Glu Pro Pro Leu Ser Pro Pro Glu Arg Leu Pro Ile
545                 550                 555                 560

Arg Arg Ser Ser Thr Arg Asp Lys Asn Arg Arg Gly Glu Thr Cys Phe
                565                 570                 575

Leu Leu Thr Thr Gly Asp Tyr Thr Cys Ala Ser Asp Gly Gly Ile Arg
            580                 585                 590

Lys Gly Tyr Glu Lys Ser Arg Ser Leu Asn Asn Ile Ala Gly Leu Ala
        595                 600                 605

Gly Asn Ala Leu Arg Leu Ser Pro Val Thr Ser Pro Tyr Asn Ser Pro
    610                 615                 620

Cys Pro Leu Arg Arg Ser Arg Ser Pro Ile Pro Ser Ile Leu
625                 630                 635


<210> 44
<211> 638
<212> PRT
<213> Rattus norvegicus

<400> 44
Met Gly Lys Ile Glu Asn Asn Glu Arg Val Ile Leu Asn Val Gly Gly
  1               5                  10                  15

Thr Arg His Glu Thr Tyr Arg Ser Thr Leu Lys Thr Leu Pro Gly Thr
             20                  25                  30

Arg Leu Ala Leu Leu Ala Ser Ser Glu Pro Gln Gly Asp Cys Leu Thr
         35                  40                  45

Ala Ala Gly Asp Lys Leu Gln Pro Leu Pro Pro Pro Leu Ser Pro Pro
     50                  55                  60

Pro Arg Pro Pro Pro Leu Ser Pro Val Pro Ser Gly Cys Phe Glu Gly
```

```
 65                  70                  75                  80

Gly Ala Gly Asn Cys Ser Ser His Gly Gly Asn Gly Ser Asp His Pro
                 85                  90                  95

Gly Gly Gly Arg Glu Phe Phe Phe Asp Arg His Pro Gly Val Phe Ala
            100                 105                 110

Tyr Val Leu Asn Tyr Tyr Arg Thr Gly Lys Leu His Cys Pro Ala Asp
        115                 120                 125

Val Cys Gly Pro Leu Phe Glu Glu Glu Leu Ala Phe Trp Gly Ile Asp
    130                 135                 140

Glu Thr Asp Val Glu Pro Cys Cys Trp Met Thr Tyr Arg Gln His Arg
145                 150                 155                 160

Asp Ala Glu Glu Ala Leu Asp Ile Phe Glu Thr Pro Asp Leu Ile Gly
                165                 170                 175

Gly Asp Pro Gly Asp Asp Glu Asp Leu Gly Gly Lys Arg Leu Gly Ile
            180                 185                 190

Glu Asp Ala Ala Gly Leu Gly Gly Pro Asp Gly Lys Ser Gly Arg Trp
        195                 200                 205

Arg Lys Leu Gln Pro Arg Met Trp Ala Leu Phe Glu Asp Pro Tyr Ser
    210                 215                 220

Ser Arg Ala Ala Arg Phe Ile Ala Phe Ala Ser Leu Phe Phe Ile Leu
225                 230                 235                 240

Val Ser Ile Thr Thr Phe Cys Leu Glu Thr His Glu Ala Phe Asn Ile
                245                 250                 255

Val Lys Asn Lys Thr Glu Pro Val Ile Asn Gly Thr Ser Ala Val Leu
            260                 265                 270

Gln Tyr Glu Ile Glu Thr Asp Pro Ala Leu Thr Tyr Val Glu Gly Val
        275                 280                 285

Cys Val Val Trp Phe Thr Phe Glu Phe Leu Val Arg Ile Val Phe Ser
    290                 295                 300

Pro Asn Lys Leu Glu Phe Ile Lys Asn Leu Leu Asn Ile Ile Asp Phe
305                 310                 315                 320

Val Ala Ile Leu Pro Phe Tyr Leu Glu Val Gly Leu Ser Gly Leu Ser
                325                 330                 335

Ser Lys Ala Ala Lys Asp Val Leu Gly Phe Leu Arg Val Val Arg Phe
            340                 345                 350

Val Arg Ile Leu Arg Ile Phe Lys Leu Thr Arg His Phe Val Gly Leu
        355                 360                 365

Arg Val Leu Gly His Thr Leu Arg Ala Ser Thr Asn Glu Phe Leu Leu
```

```
    370                 375                 380

Leu Ile Ile Phe Leu Ala Leu Gly Val Leu Ile Phe Ala Thr Met Ile
385                 390                 395                 400

Tyr Tyr Ala Glu Arg Val Gly Ala Gln Pro Asn Asp Pro Ser Ala Ser
                405                 410                 415

Glu His Thr Gln Phe Lys Asn Ile Pro Ile Gly Phe Trp Trp Ala Val
            420                 425                 430

Val Thr Met Thr Thr Leu Gly Tyr Gly Asp Met Tyr Pro Gln Thr Trp
        435                 440                 445

Ser Gly Met Leu Val Gly Ala Leu Cys Ala Leu Ala Gly Val Leu Thr
    450                 455                 460

Ile Ala Met Pro Val Pro Val Ile Val Asn Asn Phe Gly Met Tyr Tyr
465                 470                 475                 480

Ser Leu Ala Met Ala Lys Gln Lys Leu Pro Arg Lys Arg Lys Lys His
                485                 490                 495

Ile Pro Pro Ala Pro Leu Ala Ser Ser Pro Thr Phe Cys Lys Thr Glu
            500                 505                 510

Leu Asn Met Ala Cys Asn Ser Thr Gln Ser Asp Thr Cys Leu Gly Lys
        515                 520                 525

Glu Asn Arg Leu Leu Glu His Asn Arg Ser Val Leu Ser Gly Asp Asp
    530                 535                 540

Ser Thr Gly Ser Glu Pro Pro Leu Ser Pro Pro Glu Arg Leu Pro Ile
545                 550                 555                 560

Arg Arg Ser Ser Thr Arg Asp Lys Asn Arg Arg Gly Glu Thr Cys Phe
                565                 570                 575

Leu Leu Thr Thr Gly Asp Tyr Thr Cys Ala Ser Asp Gly Gly Ile Arg
            580                 585                 590

Lys Gly Tyr Glu Lys Ser Arg Ser Leu Asn Asn Ile Ala Gly Leu Ala
        595                 600                 605

Gly Asn Ala Leu Arg Leu Ser Pro Val Thr Ser Pro Tyr Asn Ser Pro
    610                 615                 620

Cys Pro Leu Arg Arg Ser Arg Ser Pro Ile Pro Ser Ile Leu
625                 630                 635


<210> 45
<211> 613
<212> PRT
<213> Homo sapiens

<400> 45
```

```
Met Gly Lys Ile Glu Asn Asn Glu Arg Val Ile Leu Asn Val Gly Gly
 1               5                  10                  15

Thr Arg His Glu Thr Tyr Arg Ser Thr Leu Lys Thr Leu Pro Gly Thr
            20                  25                  30

Arg Leu Ala Leu Leu Ala Ser Ser Glu Pro Pro Gly Asp Cys Leu Thr
        35                  40                  45

Thr Ala Gly Asp Lys Leu Gln Pro Ser Pro Pro Pro Leu Ser Pro Pro
    50                  55                  60

Pro Arg Ala Pro Pro Leu Ser Pro Gly Pro Gly Gly Cys Phe Glu Gly
65                  70                  75                  80

Gly Ala Gly Asn Cys Ser Ser Arg Gly Gly Arg Ala Ser Asp His Pro
                85                  90                  95

Gly Gly Gly Arg Glu Phe Phe Phe Asp Arg His Pro Gly Val Phe Ala
            100                 105                 110

Tyr Val Leu Asn Tyr Tyr Arg Thr Gly Lys Leu His Cys Pro Ala Asp
        115                 120                 125

Val Cys Gly Pro Leu Phe Glu Glu Glu Leu Ala Phe Trp Gly Ile Asp
    130                 135                 140

Glu Thr Asp Val Glu Pro Cys Cys Trp Met Thr Tyr Arg Gln His Arg
145                 150                 155                 160

Asp Ala Glu Glu Ala Leu Asp Ile Phe Glu Thr Pro Asp Leu Ile Gly
                165                 170                 175

Gly Asp Pro Gly Asp Asp Glu Asp Leu Ala Ala Lys Arg Leu Gly Ile
            180                 185                 190

Glu Asp Ala Ala Gly Leu Gly Gly Pro Asp Gly Lys Ser Gly Arg Trp
        195                 200                 205

Arg Arg Leu Gln Pro Arg Met Trp Ala Leu Phe Glu Asp Pro Tyr Ser
    210                 215                 220

Ser Arg Ala Ala Arg Phe Ile Ala Phe Ala Ser Leu Phe Phe Ile Leu
225                 230                 235                 240

Val Ser Ile Thr Thr Phe Cys Leu Glu Thr His Glu Ala Phe Asn Ile
                245                 250                 255

Val Lys Asn Lys Thr Glu Pro Val Ile Asn Gly Thr Ser Val Val Leu
            260                 265                 270

Gln Tyr Glu Ile Glu Thr Asp Pro Ala Leu Thr Tyr Val Glu Gly Val
        275                 280                 285

Cys Val Val Trp Phe Thr Phe Glu Phe Leu Val Arg Ile Val Phe Ser
    290                 295                 300
```

```
Pro Asn Lys Leu Glu Phe Ile Lys Asn Leu Leu Asn Ile Ile Asp Phe
305                 310                 315                 320

Val Ala Ile Leu Pro Phe Tyr Leu Glu Val Gly Leu Ser Gly Leu Ser
                325                 330                 335

Ser Lys Ala Ala Lys Asp Val Leu Gly Phe Leu Arg Val Val Arg Phe
            340                 345                 350

Val Arg Ile Leu Arg Ile Phe Lys Leu Thr Arg His Phe Val Gly Leu
        355                 360                 365

Arg Val Leu Gly His Thr Leu Arg Ala Ser Thr Asn Glu Phe Leu Leu
    370                 375                 380

Leu Ile Ile Phe Leu Ala Leu Gly Val Leu Ile Phe Ala Thr Met Ile
385                 390                 395                 400

Tyr Tyr Ala Glu Arg Val Gly Ala Gln Pro Asn Asp Pro Ser Ala Ser
                405                 410                 415

Glu His Thr Gln Phe Lys Asn Ile Pro Ile Gly Phe Trp Trp Ala Val
            420                 425                 430

Val Thr Met Thr Thr Leu Gly Tyr Gly Asp Met Tyr Pro Gln Thr Trp
        435                 440                 445

Ser Gly Met Leu Val Gly Ala Leu Cys Ala Leu Ala Gly Val Leu Thr
    450                 455                 460

Ile Ala Met Pro Val Pro Val Ile Val Asn Asn Phe Gly Met Tyr Tyr
465                 470                 475                 480

Ser Leu Ala Met Ala Lys Gln Lys Leu Pro Arg Lys Arg Lys Lys His
                485                 490                 495

Ile Pro Pro Ala Pro Gln Ala Ser Ser Pro Thr Phe Cys Lys Thr Glu
            500                 505                 510

Leu Asn Met Ala Cys Asn Ser Thr Gln Ser Asp Thr Cys Leu Gly Lys
        515                 520                 525

Asp Asn Arg Leu Leu Glu His Asn Arg Ser Val Leu Ser Gly Asp Asp
    530                 535                 540

Ser Thr Gly Ser Glu Pro Pro Leu Ser Pro Pro Glu Arg Leu Pro Ile
545                 550                 555                 560

Arg Arg Ser Ser Thr Arg Asp Lys Asn Arg Arg Gly Glu Thr Cys Phe
                565                 570                 575

Leu Leu Thr Thr Gly Asp Tyr Thr Cys Ala Ser Asp Gly Gly Ile Arg
            580                 585                 590

Lys Asp Asn Cys Lys Glu Val Val Ile Thr Gly Tyr Thr Gln Ala Glu
        595                 600                 605
```

```
Ala Arg Ser Leu Thr
    610


<210> 46
<211> 613
<212> PRT
<213> Rattus norvegicus

<400> 46
Met Gly Lys Ile Glu Asn Asn Glu Arg Val Ile Leu Asn Val Gly Gly
  1               5                  10                  15

Thr Arg His Glu Thr Tyr Arg Ser Thr Leu Lys Thr Leu Pro Gly Thr
             20                  25                  30

Arg Leu Ala Leu Leu Ala Ser Ser Glu Pro Gln Gly Asp Cys Leu Thr
         35                  40                  45

Ala Ala Gly Asp Lys Leu Gln Pro Leu Pro Pro Pro Leu Ser Pro Pro
    50                  55                  60

Pro Arg Pro Pro Pro Leu Ser Pro Val Pro Ser Gly Cys Phe Glu Gly
 65                  70                  75                  80

Gly Ala Gly Asn Cys Ser Ser His Gly Gly Asn Gly Ser Asp His Pro
                85                  90                  95

Gly Gly Gly Arg Glu Phe Phe Phe Asp Arg His Pro Gly Val Phe Ala
            100                 105                 110

Tyr Val Leu Asn Tyr Tyr Arg Thr Gly Lys Leu His Cys Pro Ala Asp
        115                 120                 125

Val Cys Gly Pro Leu Phe Glu Glu Glu Leu Ala Phe Trp Gly Ile Asp
    130                 135                 140

Glu Thr Asp Val Glu Pro Cys Cys Trp Met Thr Tyr Arg Gln His Arg
145                 150                 155                 160

Asp Ala Glu Glu Ala Leu Asp Ile Phe Glu Thr Pro Asp Leu Ile Gly
                165                 170                 175

Gly Asp Pro Gly Asp Asp Glu Asp Leu Gly Gly Lys Arg Leu Gly Ile
            180                 185                 190

Glu Asp Ala Ala Gly Leu Gly Gly Pro Asp Gly Lys Ser Gly Arg Trp
        195                 200                 205

Arg Lys Leu Gln Pro Arg Met Trp Ala Leu Phe Glu Asp Pro Tyr Ser
    210                 215                 220

Ser Arg Ala Ala Arg Phe Ile Ala Phe Ala Ser Leu Phe Phe Ile Leu
225                 230                 235                 240

Val Ser Ile Thr Thr Phe Cys Leu Glu Thr His Glu Ala Phe Asn Ile
                245                 250                 255
```

```
Val Lys Asn Lys Thr Glu Pro Val Ile Asn Gly Thr Ser Ala Val Leu
            260                 265                 270

Gln Tyr Glu Ile Glu Thr Asp Pro Ala Leu Thr Tyr Val Glu Gly Val
        275                 280                 285

Cys Val Val Trp Phe Thr Phe Glu Phe Leu Val Arg Ile Val Phe Ser
    290                 295                 300

Pro Asn Lys Leu Glu Phe Ile Lys Asn Leu Leu Asn Ile Ile Asp Phe
305                 310                 315                 320

Val Ala Ile Leu Pro Phe Tyr Leu Glu Val Gly Leu Ser Gly Leu Ser
                325                 330                 335

Ser Lys Ala Ala Lys Asp Val Leu Gly Phe Leu Arg Val Val Arg Phe
            340                 345                 350

Val Arg Ile Leu Arg Ile Phe Lys Leu Thr Arg His Phe Val Gly Leu
        355                 360                 365

Arg Val Leu Gly His Thr Leu Arg Ala Ser Thr Asn Glu Phe Leu Leu
    370                 375                 380

Leu Ile Ile Phe Leu Ala Leu Gly Val Leu Ile Phe Ala Thr Met Ile
385                 390                 395                 400

Tyr Tyr Ala Glu Arg Val Gly Ala Gln Pro Asn Asp Pro Ser Ala Ser
                405                 410                 415

Glu His Thr Gln Phe Lys Asn Ile Pro Ile Gly Phe Trp Trp Ala Val
            420                 425                 430

Val Thr Met Thr Thr Leu Gly Tyr Gly Asp Met Tyr Pro Gln Thr Trp
        435                 440                 445

Ser Gly Met Leu Val Gly Ala Leu Cys Ala Leu Ala Gly Val Leu Thr
    450                 455                 460

Ile Ala Met Pro Val Pro Val Ile Val Asn Asn Phe Gly Met Tyr Tyr
465                 470                 475                 480

Ser Leu Ala Met Ala Lys Gln Lys Leu Pro Arg Lys Arg Lys Lys His
                485                 490                 495

Ile Pro Pro Ala Pro Leu Ala Ser Ser Pro Thr Phe Cys Lys Thr Glu
            500                 505                 510

Leu Asn Met Ala Cys Asn Ser Thr Gln Ser Asp Thr Cys Leu Gly Lys
        515                 520                 525

Glu Asn Arg Leu Leu Glu His Asn Arg Ser Val Leu Ser Gly Asp Asp
    530                 535                 540

Ser Thr Gly Ser Glu Pro Pro Leu Ser Pro Pro Glu Arg Leu Pro Ile
545                 550                 555                 560
```

```
Arg Arg Ser Ser Thr Arg Asp Lys Asn Arg Arg Gly Glu Thr Cys Phe
                565                 570                 575

Leu Leu Thr Thr Gly Asp Tyr Thr Cys Ala Ser Asp Gly Gly Ile Arg
            580                 585                 590

Lys Asp Asn Cys Lys Asp Val Val Ile Thr Gly Tyr Thr Gln Ala Glu
        595                 600                 605

Ala Arg Ser Leu Thr
    610
```

<210> 47
<211> 624
<212> PRT
<213> Rattus norvegicus

<400> 47

```
Met Ser Lys Ile Glu Asn Asn Glu Arg Val Ile Leu Asn Val Gly Gly
  1               5                  10                  15

Thr Arg His Glu Thr Tyr Arg Ser Thr Leu Lys Thr Leu Pro Gly Thr
             20                  25                  30

Arg Leu Ala Leu Leu Ala Ser Ser Glu Pro Gln Gly Asp Cys Leu Thr
         35                  40                  45

Ala Ala Gly Asp Lys Leu Gln Pro Leu Pro Pro Pro Leu Ser Pro Pro
     50                  55                  60

Pro Arg Pro Pro Pro Leu Ser Pro Val Pro Ser Gly Cys Phe Glu Gly
 65                  70                  75                  80

Gly Ala Gly Asn Cys Ser Ser His Gly Gly Asn Gly Ser Asp His Pro
                 85                  90                  95

Gly Gly Gly Arg Glu Phe Phe Phe Asp Arg His Pro Gly Val Phe Ala
            100                 105                 110

Tyr Val Leu Asn Tyr Tyr Arg Thr Gly Lys Leu His Cys Pro Ala Asp
        115                 120                 125

Val Cys Gly Pro Leu Phe Glu Glu Glu Leu Ala Phe Trp Gly Ile Asp
    130                 135                 140

Glu Thr Asp Val Glu Pro Cys Cys Trp Met Thr Tyr Arg Gln His Arg
145                 150                 155                 160

Asp Ala Glu Glu Ala Leu Asp Ile Phe Glu Thr Pro Asp Leu Ile Gly
                165                 170                 175

Gly Asp Pro Gly Asp Asp Glu Asp Leu Gly Gly Lys Arg Leu Gly Ile
            180                 185                 190

Glu Asp Ala Ala Gly Leu Gly Gly Pro Asp Gly Lys Ser Gly Arg Trp
```

```
        195                 200                 205

Arg Lys Leu Gln Pro Arg Met Trp Ala Leu Phe Glu Asp Pro Tyr Ser
    210                 215                 220

Ser Arg Ala Ala Arg Phe Ile Ala Phe Ala Ser Leu Phe Phe Ile Leu
225                 230                 235                 240

Val Ser Ile Thr Thr Phe Cys Leu Glu Thr His Glu Ala Phe Asn Ile
                245                 250                 255

Val Lys Asn Lys Thr Glu Pro Val Ile Asn Gly Thr Ser Ala Val Leu
            260                 265                 270

Gln Tyr Glu Ile Glu Thr Asp Pro Ala Leu Thr Tyr Val Glu Gly Val
        275                 280                 285

Cys Val Val Trp Phe Thr Phe Glu Phe Leu Val Arg Ile Val Phe Ser
    290                 295                 300

Pro Asn Lys Leu Glu Phe Ile Lys Asn Leu Leu Asn Ile Ile Asp Phe
305                 310                 315                 320

Val Ala Ile Leu Pro Phe Tyr Leu Glu Val Gly Leu Ser Gly Leu Ser
                325                 330                 335

Ser Lys Ala Ala Lys Asp Val Leu Gly Phe Leu Arg Val Val Arg Phe
            340                 345                 350

Val Arg Ile Leu Arg Ile Phe Lys Leu Thr Arg His Phe Val Gly Leu
        355                 360                 365

Arg Val Leu Gly His Thr Leu Arg Ala Ser Thr Asn Glu Phe Leu Leu
    370                 375                 380

Leu Ile Ile Phe Leu Ala Leu Gly Val Leu Ile Phe Ala Thr Met Ile
385                 390                 395                 400

Tyr Tyr Ala Glu Arg Val Gly Ala Gln Pro Asn Asp Pro Ser Ala Ser
                405                 410                 415

Glu His Thr Gln Phe Lys Asn Ile Pro Ile Gly Phe Trp Trp Ala Val
            420                 425                 430

Val Thr Met Thr Thr Leu Gly Tyr Gly Asp Met Tyr Pro Gln Thr Trp
        435                 440                 445

Ser Gly Met Leu Val Gly Ala Leu Cys Ala Leu Ala Gly Val Leu Thr
    450                 455                 460

Ile Ala Met Pro Val Pro Val Ile Val Asn Asn Phe Gly Met Tyr Tyr
465                 470                 475                 480

Ser Leu Ala Met Ala Lys Gln Lys Leu Pro Arg Lys Arg Lys Lys His
                485                 490                 495

Ile Pro Pro Ala Pro Leu Ala Ser Ser Pro Thr Phe Cys Lys Thr Glu
```

```
            500                 505                 510

Leu Asn Met Ala Cys Asn Ser Thr Gln Ser Asp Thr Cys Leu Gly Lys
        515                 520                 525

Glu Asn Arg Leu Leu Glu His Asn Arg Ser Val Leu Ser Gly Asp Asp
    530                 535                 540

Ser Thr Gly Ser Glu Pro Pro Leu Ser Pro Pro Glu Arg Leu Pro Ile
545                 550                 555                 560

Arg Arg Ser Ser Thr Arg Asp Lys Asn Arg Arg Gly Glu Thr Cys Phe
                565                 570                 575

Leu Leu Thr Thr Gly Asp Tyr Thr Cys Ala Ser Asp Gly Gly Ile Arg
            580                 585                 590

Lys Val Leu Tyr Arg Ile Tyr His Gly Phe Leu Pro Ala Glu Asn Gly
        595                 600                 605

Thr Leu Arg Phe Ser His Ser Lys Asp Cys Thr Gly Asn Phe Cys Tyr
    610                 615                 620
```

<210> 48
<211> 98
<212> PRT
<213> Homo sapiens

<400> 48

```
Arg Val Arg Leu Asn Val Gly Gly Lys Arg Phe Glu Thr Ser Lys Ser
  1               5                  10                  15

Thr Leu Thr Arg Phe Pro Asp Thr Arg Leu Gly Arg Leu Leu Glu Cys
            20                  25                  30

Arg Asp Cys Asp Phe Tyr Asp Asp Ala Thr Gly Glu Tyr Phe Phe Asp
        35                  40                  45

Arg Ser Pro Lys His Phe Glu His Ile Leu Asn Phe Tyr Arg Thr Gly
    50                  55                  60

Gly Lys Leu His Arg Pro Glu Glu Val Cys Leu Glu Ser Phe Leu Glu
65                  70                  75                  80

Glu Leu Glu Phe Tyr Gly Leu Asp Glu Leu Ala Ile Glu Leu Cys Cys
                85                  90                  95

Glu Asp
```

<210> 49
<211> 185

<212> PRT
<213> Homo sapiens

<400> 49
Leu Glu Ile Leu Asp Tyr Val Phe Thr Val Ile Phe Thr Leu Glu Met
1 5 10 15

Leu Leu Lys Phe Ile Ala Leu Gly Phe Lys Leu Lys Tyr Leu Arg Ser
20 25 30

Pro Trp Asn Ile Leu Asp Phe Leu Ile Val Leu Pro Ser Leu Ile Asp
35 40 45

Leu Ile Leu Phe Leu Ser Gly Gly Gly Ser Val Leu Arg Leu Leu Arg
50 55 60

Leu Leu Arg Leu Leu Arg Leu Leu Arg Arg Leu Glu Gly Leu Arg Thr
65 70 75 80

Leu Leu Gln Ser Leu Gly Arg Ser Leu Lys Ser Leu Leu Asn Leu Leu
85 90 95

Leu Leu Leu Leu Leu Leu Leu Phe Ile Phe Ala Ile Ile Gly Val Gln
100 105 110

Leu Phe Gly Gly Glu Phe Asn Lys Cys Cys Asp Gly Val Asn Pro Ile
115 120 125

Asn Gly Asn Ser Asn Phe Asp Ser Phe Gly Glu Ala Phe Tyr Trp Leu
130 135 140

Phe Arg Thr Leu Thr Thr Glu Gly Trp Gly Asp Ile Met Pro Asp Thr
145 150 155 160

Leu Asp Ala Pro Val Leu Gly Lys Ile Phe Phe Val Ile Phe Ile Ile
165 170 175

Leu Gly Gly Leu Leu Leu Leu Asn Leu
180 185

<210> 50
<211> 95
<212> PRT
<213> Homo sapiens

<400> 50
Val Thr Leu Asn Val Gly Gly Lys Lys Phe His Ala His Lys Ala Val
1 5 10 15

Leu Ala Ala His Ser Pro Tyr Phe Lys Ala Leu Phe Ser Ser Asp Phe
20 25 30

Lys Glu Ser Asp Lys Ser Glu Ile Tyr Leu Phe Asp Val Ser Pro Glu
35 40 45

Asp Phe Arg Ala Leu Leu Asn Phe Leu Tyr Thr Gly Lys Leu Asp Ile

```
     50                  55                  60

Pro Glu Glu Asn Val Glu Glu Leu Leu Glu Leu Ala Asp Tyr Leu Gln
 65                  70                  75                  80

Ile Pro Gly Leu Val Glu Leu Cys Glu Glu Phe Leu Leu Lys Asn
                 85                  90                  95


<210> 51
<211> 371
<212> PRT
<213> Mus musculus

<400> 51
Met Asn Gly Ser Asp Ser Gln Gly Ala Glu Asp Ser Ser Gln Glu Gly
  1               5                  10                  15

Gly Gly Gly Trp Gln Pro Glu Ala Val Leu Val Pro Leu Phe Phe Ala
             20                  25                  30

Leu Ile Phe Leu Val Gly Ala Val Gly Asn Ala Leu Val Leu Ala Val
         35                  40                  45

Leu Leu Arg Gly Gly Gln Ala Val Ser Thr Thr Asn Leu Phe Ile Leu
     50                  55                  60

Asn Leu Gly Val Ala Asp Leu Cys Phe Ile Leu Cys Cys Val Pro Phe
 65                  70                  75                  80

Gln Ala Thr Ile Tyr Thr Leu Asp Asp Trp Val Phe Gly Ser Leu Leu
                 85                  90                  95

Cys Lys Ala Val His Phe Leu Ile Phe Leu Thr Met His Ala Ser Ser
            100                 105                 110

Phe Thr Leu Ala Ala Val Ser Leu Asp Arg Tyr Leu Ala Ile Arg Tyr
        115                 120                 125

Pro Met His Ser Arg Glu Leu Arg Thr Pro Arg Asn Ala Leu Ala Ala
    130                 135                 140

Ile Gly Leu Ile Trp Gly Leu Ala Leu Leu Phe Ser Gly Pro Tyr Leu
145                 150                 155                 160

Ser Tyr Tyr Ser Gln Ser Gln Leu Ala Asn Leu Thr Val Cys His Pro
                165                 170                 175

Ala Trp Ser Ala Pro Arg Arg Arg Ala Met Asp Leu Cys Thr Phe Val
            180                 185                 190

Phe Ser Tyr Leu Leu Pro Val Leu Val Leu Ser Leu Thr Tyr Ala Arg
        195                 200                 205

Thr Leu His Tyr Leu Trp Arg Thr Val Asp Pro Val Ala Ala Gly Ser
    210                 215                 220
```

```
Gly Ser Gln Arg Ala Lys Arg Lys Val Thr Arg Met Ile Val Ile Val
225                 230                 235                 240

Ala Val Leu Phe Cys Leu Cys Trp Met Pro His His Ala Leu Ile Leu
                245                 250                 255

Cys Val Trp Phe Gly Arg Phe Pro Leu Thr Arg Ala Thr Tyr Ala Leu
            260                 265                 270

Arg Ile Leu Ser His Leu Val Ser Tyr Ala Asn Ser Cys Val Asn Pro
        275                 280                 285

Ile Val Tyr Ala Leu Val Ser Lys His Phe Arg Lys Gly Phe Arg Lys
    290                 295                 300

Ile Cys Ala Gly Leu Leu Arg Arg Ala Pro Arg Arg Ala Ser Gly Arg
305                 310                 315                 320

Val Cys Ile Leu Ala Pro Gly Asn His Ser Gly Gly Met Leu Glu Pro
                325                 330                 335

Glu Ser Thr Asp Leu Thr Gln Val Ser Glu Ala Ala Gly Pro Leu Val
            340                 345                 350

Pro Ala Pro Ala Leu Pro Asn Cys Thr Thr Leu Ser Arg Thr Leu Asp
        355                 360                 365

Pro Ala Cys
    370


<210> 52
<211> 387
<212> PRT
<213> Homo sapiens

<400> 52
Met Asn Val Ser Gly Cys Pro Gly Ala Gly Asn Ala Ser Gln Ala Gly
  1               5                  10                  15

Gly Gly Gly Gly Trp His Pro Glu Ala Val Ile Val Pro Leu Leu Phe
             20                  25                  30

Ala Leu Ile Phe Leu Val Gly Thr Val Gly Asn Thr Leu Val Leu Ala
         35                  40                  45

Val Leu Leu Arg Gly Gly Gln Ala Val Ser Thr Thr Asn Leu Phe Ile
     50                  55                  60

Leu Asn Leu Gly Val Ala Asp Leu Cys Phe Ile Leu Cys Cys Val Pro
 65                  70                  75                  80

Phe Gln Ala Thr Ile Tyr Thr Leu Asp Gly Trp Val Phe Gly Ser Leu
                 85                  90                  95

Leu Cys Lys Ala Val His Phe Leu Ile Phe Leu Thr Met His Ala Ser
            100                 105                 110
```

```
Ser Phe Thr Leu Ala Ala Val Ser Leu Asp Arg Tyr Leu Ala Ile Arg
        115                 120                 125

Tyr Pro Leu His Ser Arg Glu Leu Arg Thr Pro Arg Asn Ala Leu Ala
    130                 135                 140

Ala Ile Gly Leu Ile Trp Gly Leu Ser Leu Leu Phe Ser Gly Pro Tyr
145                 150                 155                 160

Leu Ser Tyr Tyr Arg Gln Ser Gln Leu Ala Asn Leu Thr Val Cys His
                165                 170                 175

Pro Ala Trp Ser Ala Pro Arg Arg Arg Ala Met Asp Ile Cys Thr Phe
            180                 185                 190

Val Phe Ser Tyr Leu Leu Pro Val Leu Val Leu Gly Leu Thr Tyr Ala
        195                 200                 205

Arg Thr Leu Arg Tyr Leu Trp Arg Ala Val Asp Pro Val Ala Ala Gly
    210                 215                 220

Ser Gly Ala Arg Arg Ala Lys Arg Lys Val Thr Arg Met Ile Leu Ile
225                 230                 235                 240

Val Ala Ala Leu Phe Cys Leu Cys Trp Met Pro His His Ala Leu Ile
                245                 250                 255

Leu Cys Val Trp Phe Gly Gln Phe Pro Leu Thr Arg Ala Thr Tyr Ala
            260                 265                 270

Leu Arg Ile Leu Ser His Leu Val Ser Tyr Ala Asn Ser Cys Val Asn
        275                 280                 285

Pro Ile Val Tyr Ala Leu Val Ser Lys His Phe Arg Lys Gly Phe Arg
    290                 295                 300

Thr Ile Cys Ala Gly Leu Leu Gly Arg Ala Pro Gly Arg Ala Ser Gly
305                 310                 315                 320

Arg Val Cys Ala Ala Ala Arg Gly Thr His Ser Gly Ser Val Leu Glu
                325                 330                 335

Arg Glu Ser Ser Asp Leu Leu His Met Ser Glu Ala Ala Gly Ala Leu
            340                 345                 350

Arg Pro Cys Pro Gly Ala Ser Gln Pro Cys Ile Leu Glu Pro Cys Pro
        355                 360                 365

Gly Pro Ser Trp Gln Gly Pro Lys Ala Gly Asp Ser Ile Leu Thr Val
    370                 375                 380

Asp Val Ala
385
```

<210> 53

<211> 372
<212> PRT
<213> Rattus norvegicus

<400> 53

```
Met Asn Gly Ser Gly Ser Gln Gly Ala Glu Asn Thr Ser Gln Glu Gly
  1               5                  10                  15

Gly Ser Gly Gly Trp Gln Pro Glu Ala Val Leu Val Pro Leu Phe Phe
             20                  25                  30

Ala Leu Ile Phe Leu Val Gly Thr Val Gly Asn Ala Leu Val Leu Ala
         35                  40                  45

Val Leu Leu Arg Gly Gly Gln Ala Val Ser Thr Thr Asn Leu Phe Ile
     50                  55                  60

Leu Asn Leu Gly Val Ala Asp Leu Cys Phe Ile Leu Cys Cys Val Pro
 65                  70                  75                  80

Phe Gln Ala Thr Ile Tyr Thr Leu Asp Asp Trp Val Phe Gly Ser Leu
                 85                  90                  95

Leu Cys Lys Ala Val His Phe Leu Ile Phe Leu Thr Met His Ala Ser
            100                 105                 110

Ser Phe Thr Leu Ala Ala Val Ser Leu Asp Arg Tyr Leu Ala Ile Arg
        115                 120                 125

Tyr Pro Leu His Ser Arg Glu Leu Arg Thr Pro Arg Asn Ala Leu Ala
    130                 135                 140

Ala Ile Gly Leu Ile Trp Gly Leu Ala Leu Leu Phe Ser Gly Pro Tyr
145                 150                 155                 160

Leu Ser Tyr Tyr Arg Gln Ser Gln Leu Ala Asn Leu Thr Val Cys His
                165                 170                 175

Pro Ala Trp Ser Ala Pro Arg Arg Arg Ala Met Asp Leu Cys Thr Phe
            180                 185                 190

Val Phe Ser Tyr Leu Leu Pro Val Leu Val Leu Ser Leu Thr Tyr Ala
        195                 200                 205

Arg Thr Leu Arg Tyr Leu Trp Arg Thr Val Asp Pro Val Thr Ala Gly
    210                 215                 220

Ser Gly Ser Gln Arg Ala Lys Arg Lys Val Thr Arg Met Ile Ile Ile
225                 230                 235                 240

Val Ala Val Leu Phe Cys Leu Cys Trp Met Pro His His Ala Leu Ile
                245                 250                 255

Leu Cys Val Trp Phe Gly Arg Phe Pro Leu Thr Arg Ala Thr Tyr Ala
            260                 265                 270

Leu Arg Ile Leu Ser His Leu Val Ser Tyr Ala Asn Ser Cys Val Asn
```

```
        275                 280                 285

Pro Ile Val Tyr Ala Leu Val Ser Lys His Phe Arg Lys Gly Phe Arg
    290                 295                 300

Lys Ile Cys Ala Gly Leu Leu Arg Pro Ala Pro Arg Arg Ala Ser Gly
305                 310                 315                 320

Arg Val Ser Ile Leu Ala Pro Gly Asn His Ser Gly Ser Met Leu Glu
                325                 330                 335

Gln Glu Ser Thr Asp Leu Thr Gln Val Ser Glu Ala Ala Gly Pro Leu
            340                 345                 350

Val Pro Pro Pro Ala Leu Pro Asn Cys Thr Ala Ser Ser Arg Thr Leu
        355                 360                 365

Asp Pro Ala Cys
    370


<210> 54
<211> 371
<212> PRT
<213> Mus musculus

<220>
<221> VARIANT
<222> (325)
<223> Wherein Xaa is any amino acid as defined in the
      specification.

<220>
<221> VARIANT
<222> (360)
<223> Wherein Xaa is any amino acid as defined in the
      specification

<400> 54
Met Asn Gly Ser Asp Ser Gln Gly Ala Glu Asp Ser Ser Gln Glu Gly
  1               5                  10                  15

Gly Gly Gly Trp Gln Pro Glu Ala Val Leu Val Pro Leu Phe Phe Ala
            20                  25                  30

Leu Ile Phe Leu Val Gly Ala Val Gly Asn Ala Leu Val Leu Ala Val
        35                  40                  45

Leu Leu Arg Gly Gly Gln Ala Val Ser Thr Thr Asn Leu Phe Ile Leu
    50                  55                  60

Asn Leu Gly Val Ala Asp Leu Cys Phe Ile Leu Cys Cys Val Pro Phe
65                  70                  75                  80

Gln Ala Thr Ile Tyr Thr Leu Asp Asp Trp Val Phe Gly Ser Leu Leu
                85                  90                  95
```

```
Cys Lys Ala Val His Phe Leu Ile Phe Leu Thr Met His Ala Ser Ser
            100                 105                 110

Phe Thr Leu Ala Ala Val Ser Leu Asp Arg Tyr Leu Ala Ile Arg Tyr
        115                 120                 125

Pro Leu His Ser Arg Glu Leu Arg Thr Pro Arg Asn Ala Leu Ala Ala
    130                 135                 140

Ile Gly Leu Ile Trp Gly Leu Ala Leu Leu Phe Ser Gly Pro Tyr Leu
145                 150                 155                 160

Ser Tyr Tyr Ser Gln Ser Gln Leu Ala Asn Leu Thr Val Cys His Pro
                165                 170                 175

Ala Trp Ser Ala Pro Arg Arg Pro Trp Asn Ser Cys Thr Phe Cys Leu
            180                 185                 190

Ser Tyr Leu Leu Pro Val Leu Val Leu Ser Leu Thr Tyr Ala Arg Thr
        195                 200                 205

Leu His Tyr Leu Trp Arg Thr Val Asp Pro Val Val Ala Gly Ser Gly
    210                 215                 220

Ser Gln Arg Ala Lys Arg Lys Val Thr Arg Met Ile Val Ile Val Ala
225                 230                 235                 240

Val Leu Phe Cys Leu Cys Trp Met Pro His His Ala Leu Ile Leu Cys
                245                 250                 255

Val Trp Phe Gly Arg Phe Pro Leu Thr Arg Ala Thr Tyr Ala Leu Arg
            260                 265                 270

Ile Leu Ser His Leu Val Ser Tyr Ala Asn Ser Cys Val Asn Pro Ile
        275                 280                 285

Val Tyr Ala Leu Val Ser Lys His Phe Arg Lys Gly Phe Arg Lys Ile
    290                 295                 300

Cys Ala Gly Leu Leu Arg Arg Ala Pro Arg Arg Ala Ser Gly Arg Val
305                 310                 315                 320

Cys Ile Leu Ala Xaa Gly Asn His Ser Gly Gly Met Leu Glu Pro Glu
                325                 330                 335

Ser Thr Asp Leu Thr Gln Val Lys Arg Gly Ser Arg Ala Pro Arg Pro
            340                 345                 350

Arg Thr Arg Thr Ser Gln Thr Xaa Thr Thr Leu Ser Arg Thr Leu Asp
        355                 360                 365

Pro Ala Cys
    370
```

<210> 55
<211> 370

<212> PRT
<213> Rattus norvegicus

<400> 55

```
Met Ala Asp Ile Gln Asn Ile Ser Leu Asp Ser Pro Gly Ser Val Gly
  1               5                  10                  15

Ala Val Ala Val Pro Val Ile Phe Ala Leu Ile Phe Leu Leu Gly Met
             20                  25                  30

Val Gly Asn Gly Leu Val Leu Ala Val Leu Leu Gln Pro Gly Pro Ser
         35                  40                  45

Ala Trp Gln Glu Pro Ser Ser Thr Thr Asp Leu Phe Ile Leu Asn Leu
     50                  55                  60

Ala Val Ala Asp Leu Cys Phe Ile Leu Cys Cys Val Pro Phe Gln Ala
 65                  70                  75                  80

Ala Ile Tyr Thr Leu Asp Ala Trp Leu Phe Gly Ala Phe Val Cys Lys
                 85                  90                  95

Thr Val His Leu Leu Ile Tyr Leu Thr Met Tyr Ala Ser Ser Phe Thr
            100                 105                 110

Leu Ala Ala Val Ser Leu Asp Arg Tyr Leu Ala Val Arg His Pro Leu
        115                 120                 125

Arg Ser Arg Ala Leu Arg Thr Pro Arg Asn Ala Arg Ala Ala Val Gly
    130                 135                 140

Leu Val Trp Leu Leu Ala Ala Leu Phe Ser Ala Pro Tyr Leu Ser Tyr
145                 150                 155                 160

Tyr Gly Thr Val Arg Tyr Gly Ala Leu Glu Leu Cys Val Pro Ala Trp
                165                 170                 175

Glu Asp Ala Arg Arg Arg Ala Leu Asp Val Ala Thr Phe Ala Ala Gly
            180                 185                 190

Tyr Leu Leu Pro Val Ala Val Val Ser Leu Ala Tyr Gly Arg Thr Leu
        195                 200                 205

Cys Phe Leu Trp Ala Ala Val Gly Pro Ala Gly Ala Ala Ala Ala Glu
    210                 215                 220

Ala Arg Arg Arg Ala Thr Gly Arg Ala Gly Arg Ala Met Leu Ala Val
225                 230                 235                 240

Ala Ala Leu Tyr Ala Leu Cys Trp Gly Pro His His Ala Leu Ile Leu
                245                 250                 255

Cys Phe Trp Tyr Gly Arg Phe Ala Phe Ser Pro Ala Thr Tyr Ala Cys
            260                 265                 270

Arg Leu Ala Ser His Cys Leu Ala Tyr Ala Asn Ser Cys Leu Asn Pro
        275                 280                 285
```

```
Leu Val Tyr Ser Leu Ala Ser Arg His Phe Arg Ala Arg Phe Arg Arg
    290                 295                 300

Leu Trp Pro Cys Gly Arg Arg Arg His Arg His His His Arg Ala His
305                 310                 315                 320

Arg Ala Leu Arg Arg Val Gln Pro Ala Ser Ser Gly Pro Ala Gly Tyr
                325                 330                 335

Pro Gly Asp Ala Arg Pro Arg Gly Trp Ser Met Glu Pro Arg Gly Asp
            340                 345                 350

Ala Leu Arg Gly Gly Gly Glu Thr Arg Leu Thr Leu Ser Pro Arg Gly
        355                 360                 365

Pro Gln
    370
```

<210> 56
<211> 205
<212> PRT
<213> Homo sapiens

<400> 56

```
Trp Val Phe Gly Asp Ala Leu Cys Lys Leu Val Gly Ala Leu Phe Val
  1               5                  10                  15

Val Asn Gly Tyr Ala Ser Ile Leu Leu Leu Thr Ala Ile Ser Ile Asp
            20                  25                  30

Arg Tyr Leu Ala Ile Val His Pro Leu Arg Tyr Arg Arg Ile Arg Thr
        35                  40                  45

Pro Arg Arg Ala Lys Val Leu Ile Leu Leu Val Trp Val Leu Ala Leu
    50                  55                  60

Leu Leu Ser Leu Pro Pro Leu Leu Phe Ser Trp Leu Arg Thr Val Glu
65                  70                  75                  80

Glu Gly Asn Thr Thr Val Cys Leu Ile Asp Phe Pro Glu Glu Ser Val
                85                  90                  95

Lys Arg Ser Tyr Val Leu Leu Ser Thr Leu Val Gly Phe Val Leu Pro
            100                 105                 110

Leu Leu Val Ile Leu Val Cys Tyr Thr Arg Ile Leu Arg Thr Leu Arg
        115                 120                 125

Lys Arg Ala Arg Ser Gln Arg Ser Leu Lys Arg Arg Ser Ser Ser Glu
    130                 135                 140

Arg Lys Ala Ala Lys Met Leu Leu Val Val Val Val Val Phe Val Leu
145                 150                 155                 160

Cys Trp Leu Pro Tyr His Ile Val Leu Leu Leu Asp Ser Leu Cys Leu
```

```
                165                 170                 175

Leu Ser Ile Trp Arg Val Leu Pro Thr Ala Leu Leu Ile Thr Leu Trp
            180                 185                 190

Leu Ala Tyr Val Asn Ser Cys Leu Asn Pro Ile Ile Tyr
        195                 200                 205


<210> 57
<211> 337
<212> PRT
<213> Homo sapiens

<400> 57
Met Asn Glu Pro Leu Asp Tyr Leu Ala Asn Ala Ser Asp Phe Pro Asp
  1               5                  10                  15

Tyr Ala Ala Ala Phe Gly Asn Cys Thr Asp Glu Asn Ile Pro Leu Lys
             20                  25                  30

Met His Tyr Leu Pro Val Ile Tyr Gly Ile Ile Phe Leu Val Gly Phe
         35                  40                  45

Pro Gly Asn Ala Val Val Ile Ser Thr Tyr Ile Phe Lys Met Arg Pro
     50                  55                  60

Trp Lys Ser Ser Thr Ile Ile Met Leu Asn Leu Ala Cys Thr Asp Leu
 65                  70                  75                  80

Leu Tyr Leu Thr Ser Leu Pro Phe Leu Ile His Tyr Tyr Ala Ser Gly
                 85                  90                  95

Glu Asn Trp Ile Phe Gly Asp Phe Met Cys Lys Phe Ile Arg Phe Ser
            100                 105                 110

Phe His Phe Asn Leu Tyr Ser Ser Ile Leu Phe Leu Thr Cys Phe Ser
        115                 120                 125

Ile Phe Arg Tyr Cys Val Ile Ile His Pro Met Ser Cys Phe Ser Ile
    130                 135                 140

His Lys Thr Arg Cys Ala Val Val Ala Cys Ala Val Val Trp Ile Ile
145                 150                 155                 160

Ser Leu Val Ala Val Ile Pro Met Thr Phe Leu Ile Thr Ser Thr Asn
                165                 170                 175

Arg Thr Asn Arg Ser Ala Cys Leu Asp Leu Thr Ser Ser Asp Glu Leu
            180                 185                 190

Asn Thr Ile Lys Trp Tyr Asn Leu Ile Leu Thr Ala Thr Thr Phe Cys
        195                 200                 205

Leu Pro Leu Val Ile Val Thr Leu Cys Tyr Thr Thr Ile Ile His Thr
    210                 215                 220
```

```
Leu Thr His Gly Leu Gln Thr Asp Ser Cys Leu Lys Gln Lys Ala Arg
225                 230                 235                 240

Arg Leu Thr Ile Leu Leu Leu Leu Ala Phe Tyr Val Cys Phe Leu Pro
                245                 250                 255

Phe His Ile Leu Arg Val Ile Arg Ile Glu Ser Arg Leu Leu Ser Ile
            260                 265                 270

Ser Cys Ser Ile Glu Asn Gln Ile His Glu Ala Tyr Ile Val Ser Arg
        275                 280                 285

Pro Leu Ala Ala Leu Asn Thr Phe Gly Asn Leu Leu Leu Tyr Val Val
    290                 295                 300

Val Ser Asp Asn Phe Gln Gln Ala Val Cys Ser Thr Val Arg Cys Lys
305                 310                 315                 320

Val Ser Gly Asn Leu Glu Gln Ala Lys Lys Ile Ser Tyr Ser Asn Asn
                325                 330                 335

Pro
```

<210> 58
<211> 373
<212> PRT
<213> Mus musculus

<400> 58

```
Met Thr Glu Val Pro Trp Ser Val Val Pro Asn Gly Thr Asp Ala Ala
  1               5                  10                  15

Phe Leu Ala Gly Leu Gly Ser Leu Trp Gly Asn Ser Thr Val Ala Ser
            20                  25                  30

Thr Ala Ala Val Ser Ser Ser Phe Gln Cys Ala Leu Thr Lys Thr Gly
        35                  40                  45

Phe Gln Phe Tyr Tyr Leu Pro Ala Val Tyr Ile Leu Val Phe Ile Ile
    50                  55                  60

Gly Phe Leu Gly Asn Ser Val Ala Ile Trp Met Phe Val Phe His Met
65                  70                  75                  80

Lys Pro Trp Ser Gly Ile Ser Val Tyr Met Phe Asn Leu Ala Leu Ala
                85                  90                  95

Asp Phe Leu Tyr Val Leu Thr Leu Pro Ala Leu Ile Phe Tyr Tyr Phe
            100                 105                 110

Asn Lys Thr Asp Trp Ile Phe Gly Asp Ala Met Cys Lys Leu Gln Arg
        115                 120                 125

Phe Ile Phe His Val Asn Leu Tyr Gly Ser Ile Leu Phe Leu Thr Cys
    130                 135                 140
```

```
Ile Ser Ala His Arg Tyr Ser Gly Val Val Tyr Pro Leu Lys Ser Leu
145                 150                 155                 160

Gly Arg Leu Lys Lys Lys Asn Ala Ile Tyr Val Ser Val Leu Val Trp
                165                 170                 175

Leu Ile Val Val Val Ala Ile Ser Pro Ile Leu Phe Tyr Ser Gly Thr
            180                 185                 190

Gly Thr Arg Lys Asn Lys Thr Val Thr Cys Tyr Asp Thr Thr Ser Asn
        195                 200                 205

Asp Tyr Leu Arg Ser Tyr Phe Ile Tyr Ser Met Cys Thr Thr Val Ala
    210                 215                 220

Met Phe Cys Ile Pro Leu Val Leu Ile Leu Gly Cys Tyr Gly Leu Ile
225                 230                 235                 240

Val Lys Ala Leu Ile Tyr Asn Asp Leu Asp Asn Ser Pro Leu Arg Arg
                245                 250                 255

Lys Ser Ile Tyr Leu Val Ile Ile Val Leu Thr Val Phe Ala Val Ser
            260                 265                 270

Tyr Ile Pro Phe His Val Met Lys Thr Met Asn Leu Arg Ala Arg Leu
        275                 280                 285

Asp Phe Gln Thr Pro Glu Met Cys Asp Phe Asn Asp Arg Val Tyr Ala
    290                 295                 300

Thr Tyr Gln Val Thr Arg Gly Leu Ala Ser Leu Asn Ser Cys Val Asp
305                 310                 315                 320

Pro Ile Leu Tyr Phe Leu Ala Gly Asp Thr Phe Arg Arg Arg Leu Ser
                325                 330                 335

Arg Ala Thr Arg Lys Ala Ser Arg Arg Ser Glu Ala Asn Leu Gln Ser
            340                 345                 350

Lys Ser Glu Glu Met Thr Leu Asn Ile Leu Ser Glu Phe Lys Gln Asn
        355                 360                 365

Gly Asp Thr Ser Leu
    370


<210> 59
<211> 373
<212> PRT
<213> Homo sapiens

<400> 59
Met Thr Glu Val Leu Trp Pro Ala Val Pro Asn Gly Thr Asp Ala Ala
  1               5                  10                  15

Phe Leu Ala Gly Pro Gly Ser Ser Trp Gly Asn Ser Thr Val Ala Ser
```

```
            20                  25                  30

Thr Ala Ala Val Ser Ser Ser Phe Lys Cys Ala Leu Thr Lys Thr Gly
        35                  40                  45

Phe Gln Phe Tyr Tyr Leu Pro Ala Val Tyr Ile Leu Val Phe Ile Ile
    50                  55                  60

Gly Phe Leu Gly Asn Ser Val Ala Ile Trp Met Phe Val Phe His Met
65                  70                  75                  80

Lys Pro Trp Ser Gly Ile Ser Val Tyr Met Phe Asn Leu Ala Leu Ala
                85                  90                  95

Asp Phe Leu Tyr Val Leu Thr Leu Pro Ala Leu Ile Phe Tyr Tyr Phe
            100                 105                 110

Asn Lys Thr Asp Trp Ile Phe Gly Asp Ala Met Cys Lys Leu Gln Arg
        115                 120                 125

Phe Ile Phe His Val Asn Leu Tyr Gly Ser Ile Leu Phe Leu Thr Cys
    130                 135                 140

Ile Ser Ala His Arg Tyr Ser Gly Val Val Tyr Pro Leu Lys Ser Leu
145                 150                 155                 160

Gly Arg Leu Lys Lys Lys Asn Ala Ile Cys Ile Ser Val Leu Val Trp
                165                 170                 175

Leu Ile Val Val Val Ala Ile Ser Pro Ile Leu Phe Tyr Ser Gly Thr
            180                 185                 190

Gly Val Arg Lys Asn Lys Thr Ile Thr Cys Tyr Asp Thr Thr Ser Asp
        195                 200                 205

Glu Tyr Leu Arg Ser Tyr Phe Ile Tyr Ser Met Cys Thr Thr Val Ala
    210                 215                 220

Met Phe Cys Val Pro Leu Val Leu Ile Leu Gly Cys Tyr Gly Leu Ile
225                 230                 235                 240

Val Arg Ala Leu Ile Tyr Lys Asp Leu Asp Asn Ser Pro Leu Arg Arg
                245                 250                 255

Lys Ser Ile Tyr Leu Val Ile Ile Val Leu Thr Val Phe Ala Val Ser
            260                 265                 270

Tyr Ile Pro Phe His Val Met Lys Thr Met Asn Leu Arg Ala Arg Leu
        275                 280                 285

Asp Phe Gln Thr Pro Ala Met Cys Ala Phe Asn Asp Arg Val Tyr Ala
    290                 295                 300

Thr Tyr Gln Val Thr Arg Gly Leu Ala Ser Leu Asn Ser Cys Val Asp
305                 310                 315                 320

Pro Ile Leu Tyr Phe Leu Ala Gly Asp Thr Phe Arg Arg Arg Leu Ser
```

```
                325                 330                 335

Arg Ala Thr Arg Lys Ala Ser Arg Arg Ser Glu Ala Asn Leu Gln Ser
            340                 345                 350

Lys Ser Glu Asp Met Thr Leu Asn Ile Leu Pro Glu Phe Lys Gln Asn
        355                 360                 365

Gly Asp Thr Ser Leu
    370
```

<210> 60
<211> 373
<212> PRT
<213> Rattus norvegicus

<400> 60

```
Met Thr Glu Val Pro Trp Ser Ala Val Pro Asn Gly Thr Asp Ala Ala
  1               5                  10                  15

Phe Leu Ala Gly Leu Gly Ser Leu Trp Gly Asn Ser Thr Ile Ala Ser
             20                  25                  30

Thr Ala Ala Val Ser Ser Ser Phe Arg Cys Ala Leu Ile Lys Thr Gly
         35                  40                  45

Phe Gln Phe Tyr Tyr Leu Pro Ala Val Tyr Ile Leu Val Phe Ile Ile
     50                  55                  60

Gly Phe Leu Gly Asn Ser Val Ala Ile Trp Met Phe Val Phe His Met
 65                  70                  75                  80

Lys Pro Trp Ser Gly Ile Ser Val Tyr Met Phe Asn Leu Ala Leu Ala
                 85                  90                  95

Asp Phe Leu Tyr Val Leu Thr Leu Pro Ala Leu Ile Phe Tyr Tyr Phe
            100                 105                 110

Asn Lys Thr Asp Trp Ile Phe Gly Asp Val Met Cys Lys Leu Gln Arg
        115                 120                 125

Phe Ile Phe His Val Asn Leu Tyr Gly Ser Ile Leu Phe Leu Thr Cys
    130                 135                 140

Ile Ser Ala His Arg Tyr Ser Gly Val Val Tyr Pro Leu Lys Ser Leu
145                 150                 155                 160

Gly Arg Leu Lys Lys Lys Asn Ala Ile Tyr Val Ser Val Leu Val Trp
                165                 170                 175

Leu Ile Val Val Val Ala Ile Ser Pro Ile Leu Phe Tyr Ser Gly Thr
            180                 185                 190

Gly Ile Arg Lys Asn Lys Thr Val Thr Cys Tyr Asp Ser Thr Ser Asp
        195                 200                 205
```

```
Glu Tyr Leu Arg Ser Tyr Phe Ile Tyr Ser Met Cys Thr Thr Val Ala
    210                 215                 220

Met Phe Cys Ile Pro Leu Val Leu Ile Leu Gly Cys Tyr Gly Leu Ile
225                 230                 235                 240

Val Arg Ala Leu Ile Tyr Lys Asp Leu Asp Asn Ser Pro Leu Arg Arg
                245                 250                 255

Lys Ser Ile Tyr Leu Val Ile Ile Val Leu Thr Val Phe Ala Val Ser
            260                 265                 270

Tyr Ile Pro Phe His Val Met Lys Thr Met Asn Leu Arg Ala Arg Leu
        275                 280                 285

Asp Phe Gln Thr Pro Glu Met Cys Asp Phe Asn Asp Arg Val Tyr Ala
    290                 295                 300

Thr Tyr Gln Val Thr Arg Gly Leu Ala Ser Leu Asn Ser Cys Val Asp
305                 310                 315                 320

Pro Ile Leu Tyr Phe Leu Ala Gly Asp Thr Phe Arg Arg Arg Leu Ser
                325                 330                 335

Arg Ala Thr Arg Lys Ala Ser Arg Arg Ser Glu Ala Asn Leu Gln Ser
            340                 345                 350

Lys Ser Glu Glu Met Thr Leu Asn Ile Leu Ser Glu Phe Lys Gln Asn
        355                 360                 365

Gly Asp Thr Ser Leu
    370
```

<210> 61
<211> 373
<212> PRT
<213> Bos taurus

<400> 61

```
Met Thr Glu Val Leu Trp Pro Ala Val Pro Asn Gly Thr Asp Thr Ala
  1               5                  10                  15

Phe Leu Ala Asp Pro Gly Ser Pro Trp Gly Asn Ser Thr Val Thr Ser
             20                  25                  30

Thr Ala Ala Val Ala Ser Pro Phe Lys Cys Ala Leu Thr Lys Thr Gly
         35                  40                  45

Phe Gln Phe Tyr Tyr Leu Pro Ala Val Tyr Ile Leu Val Phe Ile Ile
     50                  55                  60

Gly Phe Leu Gly Asn Ser Val Ala Ile Trp Met Phe Val Phe His Met
 65                  70                  75                  80

Lys Pro Trp Ser Gly Ile Ser Val Tyr Met Phe Asn Leu Ala Leu Ala
                85                  90                  95
```

```
Asp Phe Leu Tyr Val Leu Thr Leu Pro Ala Leu Ile Phe Tyr Tyr Phe
            100                 105                 110

Asn Lys Thr Asp Trp Ile Phe Gly Asp Ala Met Cys Lys Leu Gln Arg
        115                 120                 125

Phe Ile Phe His Val Asn Leu Tyr Gly Ser Ile Leu Phe Leu Thr Cys
    130                 135                 140

Ile Ser Ala His Arg Tyr Ser Gly Val Val Tyr Pro Leu Lys Ser Leu
145                 150                 155                 160

Gly Arg Leu Lys Lys Lys Asn Ala Val Tyr Ile Ser Val Leu Val Trp
                165                 170                 175

Leu Ile Val Val Val Gly Ile Ser Pro Ile Leu Phe Tyr Ser Gly Thr
            180                 185                 190

Gly Ile Arg Lys Asn Lys Thr Ile Thr Cys Tyr Asp Thr Thr Ser Asp
        195                 200                 205

Glu Tyr Leu Arg Ser Tyr Phe Ile Tyr Ser Met Cys Thr Thr Val Ala
    210                 215                 220

Met Phe Cys Val Pro Leu Val Leu Ile Leu Gly Cys Tyr Gly Leu Ile
225                 230                 235                 240

Val Arg Ala Leu Ile Tyr Lys Asp Leu Asp Asn Ser Pro Leu Arg Arg
                245                 250                 255

Lys Ser Ile Tyr Leu Val Ile Ile Val Leu Thr Val Phe Ala Val Ser
            260                 265                 270

Tyr Ile Pro Phe His Val Met Lys Thr Met Asn Leu Arg Ala Arg Leu
        275                 280                 285

Asp Phe Gln Thr Pro Glu Met Cys Ala Phe Asn Asp Arg Val Tyr Ala
    290                 295                 300

Thr Tyr Gln Val Thr Arg Gly Leu Ala Ser Leu Asn Ser Cys Val Asp
305                 310                 315                 320

Pro Ile Leu Tyr Phe Leu Ala Gly Asp Thr Phe Arg Arg Arg Leu Ser
                325                 330                 335

Arg Ala Thr Arg Lys Ala Ser Arg Arg Ser Glu Ala Asn Leu Gln Ser
            340                 345                 350

Lys Ser Glu Asp Met Thr Leu Asn Ile Leu Ser Glu Phe Lys Gln Asn
        355                 360                 365

Gly Asp Thr Ser Leu
    370
```

<210> 62

<211> 254
<212> PRT
<213> Homo sapiens

<400> 62
Gly Asn Leu Leu Val Ile Leu Val Ile Leu Arg Thr Lys Lys Leu Arg
1 5 10 15

Thr Pro Thr Asn Ile Phe Leu Leu Asn Leu Ala Val Ala Asp Leu Leu
20 25 30

Phe Leu Leu Thr Leu Pro Pro Trp Ala Leu Tyr Tyr Leu Val Gly Gly
35 40 45

Asp Trp Val Phe Gly Asp Ala Leu Cys Lys Leu Val Gly Ala Leu Phe
50 55 60

Val Val Asn Gly Tyr Ala Ser Ile Leu Leu Leu Thr Ala Ile Ser Ile
65 70 75 80

Asp Arg Tyr Leu Ala Ile Val His Pro Leu Arg Tyr Arg Arg Ile Arg
85 90 95

Thr Pro Arg Arg Ala Lys Val Leu Ile Leu Leu Val Trp Val Leu Ala
100 105 110

Leu Leu Leu Ser Leu Pro Pro Leu Leu Phe Ser Trp Leu Arg Thr Val
115 120 125

Glu Glu Gly Asn Thr Thr Val Cys Leu Ile Asp Phe Pro Glu Glu Ser
130 135 140

Val Lys Arg Ser Tyr Val Leu Leu Ser Thr Leu Val Gly Phe Val Leu
145 150 155 160

Pro Leu Leu Val Ile Leu Val Cys Tyr Thr Arg Ile Leu Arg Thr Leu
165 170 175

Arg Lys Arg Ala Arg Ser Gln Arg Ser Leu Lys Arg Arg Ser Ser Ser
180 185 190

Glu Arg Lys Ala Ala Lys Met Leu Leu Val Val Val Val Val Phe Val
195 200 205

Leu Cys Trp Leu Pro Tyr His Ile Val Leu Leu Leu Asp Ser Leu Cys
210 215 220

Leu Leu Ser Ile Trp Arg Val Leu Pro Thr Ala Leu Leu Ile Thr Leu
225 230 235 240

Trp Leu Ala Tyr Val Asn Ser Cys Leu Asn Pro Ile Ile Tyr
245 250

<210> 63
<211> 797
<212> PRT

<213> Homo sapiens

<400> 63

```
Met Glu Ser Thr Cys Val Ser Ala Ser Leu Pro Arg Ser Tyr Arg Lys
  1               5                  10                  15

Thr Asp Thr Val Arg Leu Thr Ser Val Val Thr Pro Arg Pro Phe Gly
             20                  25                  30

Ser Gln Thr Arg Gly Ile Ser Ser Leu Pro Arg Ser Tyr Thr Met Asp
         35                  40                  45

Asp Ala Trp Lys Tyr Asn Gly Asp Ile Glu Asp Ile Lys Arg Thr Pro
     50                  55                  60

Asn Asn Val Val Ser Thr Pro Ala Pro Ser Pro Asp Ala Ser Gln Leu
 65                  70                  75                  80

Ala Ser Ser Leu Ser Ser Gln Lys Glu Val Ala Ala Thr Glu Glu Asp
                 85                  90                  95

Val Thr Arg Leu Pro Ser Pro Thr Ser Pro Phe Ser Ser Leu Ser Gln
            100                 105                 110

Asp Gln Ala Ala Thr Ser Lys Ala Thr Leu Ser Ser Thr Ser Gly Leu
        115                 120                 125

Asp Leu Met Ser Glu Ser Gly Glu Gly Glu Ile Ser Pro Gln Arg Glu
    130                 135                 140

Val Ser Arg Ser Gln Asp Gln Phe Ser Asp Met Arg Ile Ser Ile Asn
145                 150                 155                 160

Gln Thr Pro Gly Lys Ser Leu Asp Phe Gly Phe Thr Ile Lys Trp Asp
                165                 170                 175

Ile Pro Gly Ile Phe Val Ala Ser Val Glu Ala Gly Ser Pro Ala Glu
            180                 185                 190

Phe Ser Gln Leu Gln Val Asp Asp Glu Ile Ile Ala Ile Asn Asn Thr
        195                 200                 205

Lys Phe Ser Tyr Asn Asp Ser Lys Glu Trp Glu Glu Ala Met Ala Lys
    210                 215                 220

Ala Gln Glu Thr Gly His Leu Val Met Asp Val Arg Arg Tyr Gly Lys
225                 230                 235                 240

Ala Gly Ser Pro Glu Thr Lys Trp Ile Asp Ala Thr Ser Gly Ile Tyr
                245                 250                 255

Asn Ser Glu Lys Ser Ser Asn Leu Ser Val Thr Thr Asp Phe Ser Glu
            260                 265                 270

Ser Leu Gln Ser Ser Asn Ile Glu Ser Lys Glu Ile Asn Gly Ile His
        275                 280                 285
```

```
Asp Glu Ser Asn Ala Phe Glu Ser Lys Ala Ser Glu Ser Ile Ser Leu
    290                 295                 300

Lys Asn Leu Lys Arg Arg Ser Gln Phe Phe Glu Gln Gly Ser Ser Asp
305                 310                 315                 320

Ser Val Val Pro Asp Leu Pro Val Pro Thr Ile Ser Ala Pro Ser Arg
                325                 330                 335

Trp Val Trp Asp Gln Glu Glu Glu Arg Lys Arg Gln Glu Arg Trp Gln
            340                 345                 350

Lys Glu Gln Asp Arg Leu Leu Gln Glu Lys Tyr Gln Arg Glu Gln Glu
        355                 360                 365

Lys Leu Arg Glu Glu Trp Gln Arg Ala Lys Gln Glu Ala Glu Arg Glu
    370                 375                 380

Asn Ser Lys Tyr Leu Asp Glu Glu Leu Met Val Leu Ser Ser Asn Ser
385                 390                 395                 400

Met Ser Leu Thr Thr Arg Glu Pro Ser Leu Ala Thr Trp Glu Ala Thr
                405                 410                 415

Trp Ser Glu Gly Ser Lys Ser Ser Asp Arg Glu Gly Thr Arg Ala Gly
            420                 425                 430

Glu Glu Glu Arg Arg Gln Pro Gln Glu Glu Val Val His Glu Asp Gln
        435                 440                 445

Gly Lys Lys Pro Gln Asp Gln Leu Val Ile Glu Arg Glu Arg Lys Trp
    450                 455                 460

Glu Gln Gln Leu Gln Glu Glu Gln Glu Gln Lys Arg Leu Gln Ala Glu
465                 470                 475                 480

Ala Glu Glu Gln Lys Arg Pro Ala Glu Glu Gln Lys Arg Gln Ala Glu
                485                 490                 495

Ile Glu Arg Glu Thr Ser Val Arg Ile Tyr Gln Tyr Arg Arg Pro Val
            500                 505                 510

Asp Ser Tyr Asp Ile Pro Lys Thr Glu Glu Ala Ser Ser Gly Phe Leu
        515                 520                 525

Pro Gly Asp Arg Asn Lys Ser Arg Ser Thr Thr Glu Leu Asp Asp Tyr
    530                 535                 540

Ser Thr Asn Lys Asn Gly Asn Asn Lys Tyr Leu Asp Gln Ile Gly Asn
545                 550                 555                 560

Thr Thr Ser Ser Gln Arg Arg Ser Lys Lys Glu Gln Val Pro Ser Gly
                565                 570                 575

Ala Glu Leu Glu Arg Gln Gln Ile Leu Gln Glu Met Arg Lys Arg Thr
            580                 585                 590
```

```
Pro Leu His Asn Asp Asn Ser Trp Ile Arg Gln Arg Ser Ala Ser Val
        595                 600                 605

Asn Lys Glu Pro Val Ser Leu Pro Gly Ile Met Arg Arg Gly Glu Ser
    610                 615                 620

Leu Asp Asn Leu Asp Ser Pro Arg Ser Asn Ser Trp Arg Gln Pro Pro
625                 630                 635                 640

Trp Leu Asn Gln Pro Thr Gly Phe Tyr Ala Ser Ser Ser Val Gln Asp
                645                 650                 655

Phe Ser Arg Pro Pro Pro Gln Leu Val Ser Thr Ser Asn Arg Ala Tyr
            660                 665                 670

Met Arg Asn Pro Ser Ser Ser Val Pro Pro Pro Ser Ala Gly Ser Val
        675                 680                 685

Lys Thr Ser Thr Thr Gly Val Ala Thr Thr Gln Ser Pro Thr Pro Arg
    690                 695                 700

Ser His Ser Pro Ser Ala Ser Gln Ser Gly Ser Gln Leu Arg Asn Arg
705                 710                 715                 720

Ser Val Ser Gly Lys Arg Ile Cys Ser Tyr Cys Asn Asn Ile Leu Gly
                725                 730                 735

Lys Gly Ala Ala Met Ile Ile Glu Ser Leu Gly Leu Cys Tyr His Leu
            740                 745                 750

His Cys Phe Lys Cys Val Ala Cys Glu Cys Asp Leu Gly Gly Ser Ser
        755                 760                 765

Ser Gly Ala Glu Val Arg Ile Arg Asn His Gln Leu Tyr Cys Asn Asp
    770                 775                 780

Cys Tyr Leu Arg Phe Lys Ser Gly Arg Pro Thr Ala Met
785                 790                 795


<210> 64
<211> 797
<212> PRT
<213> Homo sapiens

<400> 64
Met Glu Ser Thr Arg Val Ser Ala Ser Leu Pro Arg Ser Tyr Arg Lys
  1               5                  10                  15

Thr Asp Thr Val Arg Leu Thr Ser Val Val Thr Pro Arg Pro Phe Gly
             20                  25                  30

Ser Gln Thr Arg Gly Ile Ser Ser Leu Pro Arg Ser Tyr Thr Met Asp
         35                  40                  45

Asp Ala Trp Lys Tyr Asn Gly Asp Val Glu Asp Ile Lys Arg Thr Pro
     50                  55                  60
```

```
Asn Asn Val Val Ser Thr Pro Ala Pro Ser Pro Asp Ala Ser Gln Leu
 65                  70                  75                  80

Ala Ser Ser Leu Ser Ser Gln Lys Glu Val Ala Ala Thr Glu Glu Asp
                85                  90                  95

Val Thr Arg Leu Pro Ser Pro Thr Ser Pro Phe Ser Ser Leu Ser Gln
            100                 105                 110

Asp Gln Ala Ala Thr Ser Lys Ala Thr Leu Ser Ser Thr Ser Gly Leu
        115                 120                 125

Asp Leu Met Ser Glu Ser Gly Glu Gly Glu Ile Ser Pro Gln Arg Glu
    130                 135                 140

Val Ser Arg Ser Gln Asp Gln Phe Ser Asp Met Arg Ile Ser Ile Asn
145                 150                 155                 160

Gln Thr Pro Gly Lys Ser Leu Asp Phe Gly Phe Thr Ile Lys Trp Asp
                165                 170                 175

Ile Pro Gly Ile Phe Val Ala Ser Val Glu Ala Gly Ser Pro Ala Glu
            180                 185                 190

Phe Ser Gln Leu Gln Val Asp Asp Glu Ile Ile Ala Ile Asn Asn Thr
        195                 200                 205

Lys Phe Ser Tyr Asn Asp Ser Lys Glu Trp Glu Glu Ala Met Ala Lys
    210                 215                 220

Ala Gln Glu Thr Gly His Leu Val Met Asp Val Arg Arg Tyr Gly Lys
225                 230                 235                 240

Ala Gly Ser Pro Glu Thr Lys Trp Ile Asp Ala Thr Ser Gly Ile Tyr
                245                 250                 255

Asn Ser Glu Lys Ser Ser Asn Leu Ser Val Thr Thr Asp Phe Ser Glu
            260                 265                 270

Ser Leu Gln Ser Ser Asn Ile Glu Ser Lys Glu Ile Asn Gly Ile His
        275                 280                 285

Asp Glu Ser Asn Ala Phe Glu Ser Lys Ala Ser Glu Ser Ile Ser Leu
    290                 295                 300

Lys Asn Leu Lys Arg Arg Ser Gln Phe Phe Glu Gln Gly Ser Ser Asp
305                 310                 315                 320

Ser Val Val Pro Asp Leu Pro Val Pro Thr Ile Ser Ala Pro Ser Arg
                325                 330                 335

Trp Val Trp Asp Gln Glu Glu Glu Arg Lys Arg Gln Glu Arg Trp Gln
            340                 345                 350

Lys Glu Gln Asp Arg Leu Leu Gln Glu Lys Tyr Gln Arg Glu Gln Glu
        355                 360                 365
```

```
Lys Leu Arg Glu Glu Trp Gln Arg Ala Lys Gln Glu Ala Glu Arg Glu
    370                 375                 380

Asn Ser Lys Tyr Leu Asp Glu Glu Leu Met Val Leu Ser Ser Asn Ser
385                 390                 395                 400

Met Ser Leu Thr Thr Arg Glu Pro Ser Leu Ala Thr Trp Glu Ala Thr
                405                 410                 415

Trp Ser Glu Gly Ser Lys Ser Ser Asp Arg Glu Gly Thr Arg Ala Gly
            420                 425                 430

Glu Glu Glu Arg Arg Gln Pro Gln Glu Glu Val Val His Glu Asp Gln
        435                 440                 445

Gly Lys Lys Pro Gln Asp Gln Leu Val Ile Glu Arg Glu Arg Lys Trp
    450                 455                 460

Glu Gln Gln Leu Gln Glu Glu Gln Glu Gln Lys Arg Leu Gln Ala Glu
465                 470                 475                 480

Ala Glu Glu Gln Lys Arg Pro Ala Glu Glu Gln Lys Arg Gln Ala Glu
                485                 490                 495

Ile Glu Arg Glu Thr Ser Val Arg Ile Tyr Gln Tyr Arg Arg Pro Val
            500                 505                 510

Asp Ser Tyr Asp Ile Pro Lys Thr Glu Glu Ala Ser Ser Gly Phe Leu
        515                 520                 525

Pro Gly Asp Arg Asn Lys Ser Arg Ser Thr Thr Glu Leu Asp Asp Tyr
    530                 535                 540

Ser Thr Asn Lys Asn Gly Asn Asn Lys Tyr Leu Asp Gln Ile Gly Asn
545                 550                 555                 560

Met Thr Ser Ser Gln Arg Arg Ser Lys Lys Glu Gln Val Pro Ser Gly
                565                 570                 575

Ala Glu Leu Glu Arg Gln Gln Ile Leu Gln Glu Met Arg Lys Arg Thr
            580                 585                 590

Pro Leu His Asn Asp Asn Ser Trp Ile Arg Gln Arg Ser Ala Ser Val
        595                 600                 605

Asn Lys Glu Pro Val Ser Leu Pro Gly Ile Met Arg Arg Gly Glu Ser
    610                 615                 620

Leu Asp Asn Leu Asp Ser Pro Arg Ser Asn Ser Trp Arg Gln Pro Pro
625                 630                 635                 640

Trp Leu Asn Gln Pro Thr Gly Phe Tyr Ala Ser Ser Ser Val Gln Asp
                645                 650                 655

Phe Ser Arg Pro Pro Pro Gln Leu Val Ser Thr Ser Asn Arg Ala Tyr
            660                 665                 670
```

```
Met Arg Asn Pro Ser Ser Ser Val Pro Pro Pro Ser Ala Gly Ser Val
        675                 680                 685

Lys Thr Ser Thr Thr Gly Val Ala Thr Thr Gln Ser Pro Thr Pro Arg
    690                 695                 700

Ser His Ser Pro Ser Ala Ser Gln Ser Gly Ser Gln Leu Arg Asn Arg
705                 710                 715                 720

Ser Val Ser Gly Lys Arg Ile Cys Ser Tyr Cys Asn Asn Ile Leu Gly
                725                 730                 735

Lys Gly Ala Ala Met Ile Ile Glu Ser Leu Gly Leu Cys Tyr His Leu
            740                 745                 750

His Cys Phe Lys Cys Val Ala Cys Glu Cys Asp Leu Gly Gly Ser Ser
        755                 760                 765

Ser Gly Ala Glu Val Arg Ile Arg Asn His Gln Leu Tyr Cys Asn Asp
    770                 775                 780

Cys Tyr Leu Arg Phe Lys Ser Gly Arg Pro Thr Ala Met
785                 790                 795


<210> 65
<211> 784
<212> PRT
<213> Homo sapiens

<400> 65
Met Glu Ser Thr Cys Val Ser Ala Ser Leu Pro Arg Ser Tyr Arg Lys
  1               5                  10                  15

Thr Asp Thr Val Arg Leu Thr Ser Val Val Thr Pro Arg Pro Phe Gly
            20                  25                  30

Ser Gln Thr Arg Gly Ile Ser Ser Leu Pro Arg Ser Tyr Thr Met Asp
        35                  40                  45

Asp Ala Trp Lys Tyr Asn Gly Asp Ile Glu Asp Ile Lys Arg Thr Pro
    50                  55                  60

Asn Asn Val Val Ser Thr Pro Ala Pro Ser Pro Asp Ala Ser Gln Leu
65                  70                  75                  80

Ala Ser Ser Leu Ser Ser Gln Lys Glu Val Ala Ala Thr Glu Glu Asp
                85                  90                  95

Val Thr Arg Leu Pro Ser Pro Thr Ser Pro Phe Ser Ser Leu Ser Gln
            100                 105                 110

Asp Gln Ala Ala Thr Ser Lys Ala Thr Leu Ser Ser Thr Ser Gly Leu
        115                 120                 125

Asp Leu Met Ser Glu Ser Gly Glu Gly Glu Ile Ser Pro Gln Arg Glu
```

```
    130                 135                 140

Val Ser Arg Ser Gln Asp Gln Phe Ser Asp Met Arg Ile Ser Ile Asn
145                 150                 155                 160

Gln Thr Pro Gly Lys Ser Leu Asp Phe Gly Phe Thr Ile Lys Trp Asp
                165                 170                 175

Ile Pro Gly Ile Phe Val Ala Ser Val Glu Ala Gly Ser Pro Ala Glu
            180                 185                 190

Phe Ser Gln Leu Gln Val Asp Asp Glu Ile Ile Ala Ile Asn Asn Thr
        195                 200                 205

Lys Phe Ser Tyr Asn Asp Ser Lys Glu Trp Glu Glu Ala Met Ala Lys
    210                 215                 220

Ala Gln Glu Thr Gly His Leu Val Met Asp Val Arg Arg Tyr Gly Lys
225                 230                 235                 240

Ala Gly Ser Pro Glu Thr Lys Trp Ile Asp Ala Thr Ser Gly Ile Tyr
                245                 250                 255

Asn Ser Glu Lys Ser Ser Asn Leu Ser Val Thr Thr Asp Phe Ser Glu
            260                 265                 270

Ser Leu Gln Ser Ser Asn Ile Glu Ser Lys Glu Ile Asn Gly Ile His
        275                 280                 285

Asp Glu Ser Asn Ala Phe Glu Ser Lys Ala Ser Glu Ser Ile Ser Leu
    290                 295                 300

Lys Asn Leu Lys Arg Arg Ser Gln Phe Phe Glu Gln Gly Ser Ser Asp
305                 310                 315                 320

Ser Val Val Pro Asp Leu Pro Val Pro Thr Ile Ser Ala Pro Ser Arg
                325                 330                 335

Trp Val Trp Asp Gln Glu Glu Glu Arg Lys Arg Gln Glu Arg Trp Gln
            340                 345                 350

Lys Glu Gln Asp Arg Leu Leu Gln Glu Lys Tyr Gln Arg Glu Gln Glu
        355                 360                 365

Lys Leu Arg Glu Glu Trp Gln Arg Ala Lys Gln Glu Ala Glu Arg Glu
    370                 375                 380

Asn Ser Lys Tyr Leu Asp Glu Glu Leu Met Val Leu Ser Ser Asn Ser
385                 390                 395                 400

Met Ser Leu Thr Thr Arg Glu Pro Ser Leu Ala Thr Trp Glu Ala Thr
                405                 410                 415

Trp Ser Glu Gly Ser Lys Ser Ser Asp Arg Glu Gly Thr Arg Ala Gly
            420                 425                 430

Glu Glu Glu Arg Arg Gln Pro Gln Glu Glu Val Val His Glu Asp Gln
```

```
        435                 440                 445

Gly Lys Lys Pro Gln Asp Gln Leu Val Ile Glu Arg Glu Arg Lys Trp
    450                 455                 460

Glu Gln Gln Leu Gln Glu Glu Gln Glu Gln Lys Arg Leu Gln Ala Glu
465                 470                 475                 480

Ala Glu Glu Gln Lys Arg Pro Ala Glu Glu Gln Lys Arg Gln Ala Glu
                485                 490                 495

Ile Glu Arg Glu Thr Ser Val Arg Ile Tyr Gln Tyr Arg Arg Pro Val
            500                 505                 510

Asp Ser Tyr Asp Ile Pro Lys Thr Glu Glu Ala Ser Ser Gly Phe Leu
        515                 520                 525

Pro Gly Asp Arg Asn Lys Ser Arg Ser Thr Thr Glu Leu Asp Asp Tyr
    530                 535                 540

Ser Thr Asn Lys Asn Gly Asn Asn Lys Tyr Leu Asp Gln Ile Gly Asn
545                 550                 555                 560

Thr Thr Ser Ser Gln Arg Arg Ser Lys Lys Glu Gln Val Pro Ser Gly
                565                 570                 575

Ala Glu Leu Glu Arg Gln Gln Ile Leu Gln Glu Met Arg Lys Arg Thr
            580                 585                 590

Pro Leu His Asn Asp Asn Ser Trp Ile Arg Gln Arg Ser Ala Ser Val
        595                 600                 605

Asn Lys Glu Pro Val Ser Leu Pro Gly Ile Met Arg Arg Gly Glu Ser
    610                 615                 620

Leu Asp Asn Leu Asp Ser Pro Arg Ser Asn Ser Trp Arg Gln Pro Pro
625                 630                 635                 640

Trp Leu Asn Gln Pro Thr Gly Phe Tyr Ala Ser Ser Ser Val Gln Asp
                645                 650                 655

Phe Ser Arg Pro Pro Pro Gln Leu Val Ser Thr Ser Asn Arg Ala Tyr
            660                 665                 670

Met Arg Asn Pro Ser Ser Ser Val Pro Pro Pro Ser Ala Gly Ser Val
        675                 680                 685

Lys Thr Ser Thr Thr Gly Val Ala Thr Thr Gln Ser Pro Thr Pro Arg
    690                 695                 700

Ser His Ser Pro Ser Ala Ser Gln Ser Gly Ser Gln Leu Arg Asn Ser
705                 710                 715                 720

Val Leu Pro Val Ser Val Thr Ser Glu Ala Leu Pro Gln Glu Leu Lys
                725                 730                 735

Ser Gly Ser Glu Thr Thr Asn Cys Thr Ala Thr Thr Ala Ile Ser Asp
```

```
            740                 745                 750

Ser Asn Leu Asp Gly Gln Pro Pro Cys Asp Val Ser Leu His Thr Lys
        755                 760                 765

Ala Leu Leu Gln Ile Glu Glu Glu Val Val Ala Ala His Val Asp Leu
    770                 775                 780
```

<210> 66
<211> 728
<212> PRT
<213> Homo sapiens

<400> 66

```
Met Glu Ser Thr Cys Val Ser Ala Ser Leu Pro Arg Ser Tyr Arg Lys
  1               5                  10                  15

Thr Asp Thr Val Arg Leu Thr Ser Val Val Thr Pro Arg Pro Phe Gly
             20                  25                  30

Ser Gln Thr Arg Gly Ile Ser Ser Leu Pro Arg Ser Tyr Thr Met Asp
         35                  40                  45

Asp Ala Trp Lys Tyr Asn Gly Asp Ile Glu Asp Ile Lys Arg Thr Pro
     50                  55                  60

Asn Asn Val Val Ser Thr Pro Ala Pro Ser Pro Asp Ala Ser Gln Leu
 65                  70                  75                  80

Ala Ser Ser Leu Ser Ser Gln Lys Glu Val Ala Ala Thr Glu Glu Asp
                 85                  90                  95

Val Thr Arg Leu Pro Ser Pro Thr Ser Pro Phe Ser Ser Leu Ser Gln
            100                 105                 110

Asp Gln Ala Ala Thr Ser Lys Ala Thr Leu Ser Ser Thr Ser Gly Leu
        115                 120                 125

Asp Leu Met Ser Glu Ser Gly Glu Gly Glu Ile Ser Pro Gln Arg Glu
    130                 135                 140

Val Ser Arg Ser Gln Asp Gln Phe Ser Asp Met Arg Ile Ser Ile Asn
145                 150                 155                 160

Gln Thr Pro Gly Lys Ser Leu Asp Phe Gly Phe Thr Ile Lys Trp Asp
                165                 170                 175

Ile Pro Gly Ile Phe Val Ala Ser Val Glu Ala Gly Ser Pro Ala Glu
            180                 185                 190

Phe Ser Gln Leu Gln Val Asp Asp Glu Ile Ile Ala Ile Asn Asn Thr
        195                 200                 205
```

```
Lys Phe Ser Tyr Asn Asp Ser Lys Glu Trp Glu Glu Ala Met Ala Lys
    210                 215                 220

Ala Gln Glu Thr Gly His Leu Val Met Asp Val Arg Arg Tyr Gly Lys
225                 230                 235                 240

Ala Gly Ser Pro Glu Thr Lys Trp Ile Asp Ala Thr Ser Gly Ile Tyr
                245                 250                 255

Asn Ser Glu Lys Ser Ser Asn Leu Ser Val Thr Thr Asp Phe Ser Glu
            260                 265                 270

Ser Leu Gln Ser Ser Asn Ile Glu Ser Lys Glu Ile Asn Gly Ile His
        275                 280                 285

Asp Glu Ser Asn Ala Phe Glu Ser Lys Ala Ser Glu Ser Ile Ser Leu
    290                 295                 300

Lys Asn Leu Lys Arg Arg Ser Gln Phe Phe Glu Gln Gly Ser Ser Asp
305                 310                 315                 320

Ser Val Val Pro Asp Leu Pro Val Pro Thr Ile Ser Ala Pro Ser Arg
                325                 330                 335

Trp Val Trp Asp Gln Glu Glu Glu Arg Lys Arg Gln Glu Arg Trp Gln
            340                 345                 350

Lys Glu Gln Asp Arg Leu Leu Gln Glu Lys Tyr Gln Arg Glu Gln Glu
        355                 360                 365

Lys Leu Arg Glu Glu Trp Gln Arg Ala Lys Gln Glu Ala Glu Arg Glu
    370                 375                 380

Asn Ser Lys Tyr Leu Asp Glu Glu Leu Met Val Leu Ser Ser Asn Ser
385                 390                 395                 400

Met Ser Leu Thr Thr Arg Glu Pro Ser Leu Ala Thr Trp Glu Ala Thr
                405                 410                 415

Trp Ser Glu Gly Ser Lys Ser Ser Asp Arg Glu Gly Thr Arg Ala Gly
            420                 425                 430

Glu Glu Glu Arg Arg Gln Pro Gln Glu Glu Val Val His Glu Asp Gln
        435                 440                 445

Gly Lys Lys Pro Gln Asp Gln Leu Val Ile Glu Arg Glu Arg Lys Trp
    450                 455                 460

Glu Gln Gln Leu Gln Glu Glu Gln Glu Gln Lys Arg Leu Gln Ala Glu
465                 470                 475                 480

Ala Glu Glu Gln Lys Arg Pro Ala Glu Glu Gln Lys Arg Gln Ala Glu
                485                 490                 495

Ile Glu Arg Glu Thr Ser Val Arg Ile Tyr Gln Tyr Arg Arg Pro Val
            500                 505                 510
```

```
Asp Ser Tyr Asp Ile Pro Lys Thr Glu Glu Ala Ser Ser Gly Phe Leu
        515                 520                 525

Pro Gly Asp Arg Asn Lys Ser Arg Ser Thr Thr Glu Leu Asp Asp Tyr
    530                 535                 540

Ser Thr Asn Lys Asn Gly Asn Asn Lys Tyr Leu Asp Gln Ile Gly Asn
545                 550                 555                 560

Thr Thr Ser Ser Gln Arg Arg Ser Lys Lys Glu Gln Val Pro Ser Gly
                565                 570                 575

Ala Glu Leu Glu Arg Gln Gln Ile Leu Gln Glu Met Arg Lys Arg Thr
            580                 585                 590

Pro Leu His Asn Asp Asn Ser Trp Ile Arg Gln Arg Ser Ala Ser Val
        595                 600                 605

Asn Lys Glu Pro Val Ser Leu Pro Gly Ile Met Arg Arg Gly Glu Ser
    610                 615                 620

Leu Asp Asn Leu Asp Ser Pro Arg Ser Asn Ser Trp Arg Gln Pro Pro
625                 630                 635                 640

Trp Leu Asn Gln Pro Thr Gly Phe Tyr Ala Ser Ser Ser Val Gln Asp
                645                 650                 655

Phe Ser Arg Pro Pro Pro Gln Leu Val Ser Thr Ser Asn Arg Ala Tyr
            660                 665                 670

Met Arg Asn Pro Ser Ser Ser Val Pro Pro Pro Ser Ala Gly Ser Val
        675                 680                 685

Lys Thr Ser Thr Thr Gly Val Ala Thr Thr Gln Ser Pro Thr Pro Arg
    690                 695                 700

Ser His Ser Pro Ser Ala Ser Gln Ser Gly Ser Gln Leu Arg Asn Ser
705                 710                 715                 720

Trp Thr Ala Asn Arg His Val Met
                725
```

<210> 67
<211> 784
<212> PRT
<213> Homo sapiens

<400> 67

```
Met Glu Ser Thr Arg Val Ser Ala Ser Leu Pro Arg Ser Tyr Arg Lys
  1               5                  10                  15

Thr Asp Thr Val Arg Leu Thr Ser Val Val Thr Pro Arg Pro Phe Gly
            20                  25                  30

Ser Gln Thr Arg Gly Ile Ser Ser Leu Pro Arg Ser Tyr Thr Met Asp
        35                  40                  45
```

```
Asp Ala Trp Lys Tyr Asn Gly Asp Val Glu Asp Ile Lys Arg Thr Pro
     50                  55                  60

Asn Asn Val Val Ser Thr Pro Ala Pro Ser Pro Asp Ala Ser Gln Leu
 65                  70                  75                  80

Ala Ser Ser Leu Ser Ser Gln Lys Glu Val Ala Ala Thr Glu Glu Asp
                 85                  90                  95

Val Thr Arg Leu Pro Ser Pro Thr Ser Pro Phe Ser Ser Leu Ser Gln
            100                 105                 110

Asp Gln Ala Ala Thr Ser Lys Ala Thr Leu Ser Ser Thr Ser Gly Leu
        115                 120                 125

Asp Leu Met Ser Glu Ser Gly Glu Gly Glu Ile Ser Pro Gln Arg Glu
    130                 135                 140

Val Ser Arg Ser Gln Asp Gln Phe Ser Asp Met Arg Ile Ser Ile Asn
145                 150                 155                 160

Gln Thr Pro Gly Lys Ser Leu Asp Phe Gly Phe Thr Ile Lys Trp Asp
                165                 170                 175

Ile Pro Gly Ile Phe Val Ala Ser Val Glu Ala Gly Ser Pro Ala Glu
            180                 185                 190

Phe Ser Gln Leu Gln Val Asp Asp Glu Ile Ile Ala Ile Asn Asn Thr
        195                 200                 205

Lys Phe Ser Tyr Asn Asp Ser Lys Glu Trp Glu Glu Ala Met Ala Lys
    210                 215                 220

Ala Gln Glu Thr Gly His Leu Val Met Asp Val Arg Arg Tyr Gly Lys
225                 230                 235                 240

Ala Gly Ser Pro Glu Thr Lys Trp Ile Asp Ala Thr Ser Gly Ile Tyr
                245                 250                 255

Asn Ser Glu Lys Ser Ser Asn Leu Ser Val Thr Thr Asp Phe Ser Glu
            260                 265                 270

Ser Leu Gln Ser Ser Asn Ile Glu Ser Lys Glu Ile Asn Gly Ile His
        275                 280                 285

Asp Glu Ser Asn Ala Phe Glu Ser Lys Ala Ser Glu Ser Ile Ser Leu
    290                 295                 300

Lys Asn Leu Lys Arg Arg Ser Gln Phe Phe Glu Gln Gly Ser Ser Asp
305                 310                 315                 320

Ser Val Val Pro Asp Leu Pro Val Pro Thr Ile Ser Ala Pro Ser Arg
                325                 330                 335

Trp Val Trp Asp Gln Glu Glu Glu Arg Lys Arg Gln Glu Arg Trp Gln
            340                 345                 350
```

```
Lys Glu Gln Asp Arg Leu Leu Gln Glu Lys Tyr Gln Arg Glu Gln Glu
        355                 360                 365

Lys Leu Arg Glu Glu Trp Gln Arg Ala Lys Gln Glu Ala Glu Arg Glu
    370                 375                 380

Asn Ser Lys Tyr Leu Asp Glu Glu Leu Met Val Leu Ser Ser Asn Ser
385                 390                 395                 400

Met Ser Leu Thr Thr Arg Glu Pro Ser Leu Ala Thr Trp Glu Ala Thr
                405                 410                 415

Trp Ser Glu Gly Ser Lys Ser Ser Asp Arg Glu Gly Thr Arg Ala Gly
            420                 425                 430

Glu Glu Glu Arg Arg Gln Pro Gln Glu Glu Val Val His Glu Asp Gln
        435                 440                 445

Gly Lys Lys Pro Gln Asp Gln Leu Val Ile Glu Arg Glu Arg Lys Trp
    450                 455                 460

Glu Gln Gln Leu Gln Glu Glu Gln Glu Gln Lys Arg Leu Gln Ala Glu
465                 470                 475                 480

Ala Glu Glu Gln Lys Arg Pro Ala Glu Glu Gln Lys Arg Gln Ala Glu
                485                 490                 495

Ile Glu Arg Glu Thr Ser Val Arg Ile Tyr Gln Tyr Arg Arg Pro Val
            500                 505                 510

Asp Ser Tyr Asp Ile Pro Lys Thr Glu Glu Ala Ser Ser Gly Phe Leu
        515                 520                 525

Pro Gly Asp Arg Asn Lys Ser Arg Ser Thr Thr Glu Leu Asp Asp Tyr
    530                 535                 540

Ser Thr Asn Lys Asn Gly Asn Asn Lys Tyr Leu Asp Gln Ile Gly Asn
545                 550                 555                 560

Met Thr Ser Ser Gln Arg Arg Ser Lys Lys Glu Gln Val Pro Ser Gly
                565                 570                 575

Ala Glu Leu Glu Arg Gln Gln Ile Leu Gln Glu Met Arg Lys Arg Thr
            580                 585                 590

Pro Leu His Asn Asp Asn Ser Trp Ile Arg Gln Arg Ser Ala Ser Val
        595                 600                 605

Asn Lys Glu Pro Val Ser Leu Pro Gly Ile Met Arg Arg Gly Glu Ser
    610                 615                 620

Leu Asp Asn Leu Asp Ser Pro Arg Ser Asn Ser Trp Arg Gln Pro Pro
625                 630                 635                 640

Trp Leu Asn Gln Pro Thr Gly Phe Tyr Ala Ser Ser Ser Val Gln Asp
                645                 650                 655
```

```
Phe Ser Arg Pro Pro Pro Gln Leu Val Ser Thr Ser Asn Arg Ala Tyr
            660                 665                 670

Met Arg Asn Pro Ser Ser Ser Val Pro Pro Pro Ser Ala Gly Ser Val
        675                 680                 685

Lys Thr Ser Thr Thr Gly Val Ala Thr Thr Gln Ser Pro Thr Pro Arg
    690                 695                 700

Ser His Ser Pro Ser Ala Ser Gln Ser Gly Ser Gln Leu Arg Asn Ser
705                 710                 715                 720

Val Leu Pro Val Ser Val Thr Ser Glu Ala Leu Pro Gln Glu Leu Lys
                725                 730                 735

Ser Gly Ser Glu Thr Thr Asn Cys Thr Ala Thr Thr Ala Ile Ser Asp
            740                 745                 750

Ser Asn Leu Asp Gly Gln Pro Pro Cys Asp Val Ser Leu His Thr Lys
        755                 760                 765

Ala Leu Leu Gln Ile Glu Glu Glu Val Val Ala Ala His Val Asp Leu
    770                 775                 780
```

<210> 68
<211> 71
<212> PRT
<213> Homo sapiens

<400> 68

```
Leu Gly Phe Ser Leu Val Gly Gly Lys Asp Ser Gly Asp Gly Gly Val
  1               5                  10                  15

Val Val Ser Ser Val Val Pro Gly Ser Pro Ala Ala Lys Ala Gly Leu
             20                  25                  30

Lys Pro Gly Asp Val Ile Leu Glu Val Asn Gly Thr Ser Val Glu Gly
         35                  40                  45

Leu Thr His Leu Glu Ala Val Asp Leu Leu Lys Glu Ala Gly Gly Lys
     50                  55                  60

Val Thr Leu Thr Val Leu Arg
 65                  70
```

<210> 69
<211> 561
<212> PRT
<213> Mus musculus

<400> 69

```
Met Ala Val Leu Leu Ala Ala Val Leu Ala Ser Ser Leu Tyr Leu Gln
 1               5                  10                  15

Val Ala Ala Asp Phe Asp Gly Arg Trp Pro Arg Gln Ile Val Ser Ser
            20                  25                  30

Ile Gly Leu Cys Arg Tyr Gly Gly Arg Ile Asp Cys Cys Trp Gly Trp
        35                  40                  45

Ala Arg Gln Ser Trp Gly Gln Cys Gln Pro Val Cys Gln Pro Gln Cys
    50                  55                  60

Lys His Gly Glu Cys Val Gly Pro Asn Lys Cys Lys Cys His Pro Gly
65                  70                  75                  80

Phe Ala Gly Lys Thr Cys Asn Gln Asp Leu Asn Glu Cys Gly Leu Lys
                85                  90                  95

Pro Arg Pro Cys Lys His Arg Cys Met Asn Thr Phe Gly Ser Tyr Lys
            100                 105                 110

Cys Tyr Cys Leu Asn Gly Tyr Met Leu Leu Pro Asp Gly Ser Cys Ser
        115                 120                 125

Ser Ala Leu Ser Cys Ser Met Ala Asn Cys Gln Tyr Gly Cys Asp Val
    130                 135                 140

Val Lys Gly Gln Val Arg Cys Gln Cys Pro Ser Pro Gly Leu Gln Leu
145                 150                 155                 160

Ala Pro Asp Gly Arg Thr Cys Val Asp Ile Asp Glu Cys Ala Thr Gly
                165                 170                 175

Arg Val Ser Cys Pro Arg Phe Arg Gln Cys Val Asn Thr Phe Gly Ser
            180                 185                 190

Tyr Ile Cys Lys Cys His Thr Gly Phe Asp Leu Met Tyr Ile Gly Gly
        195                 200                 205

Lys Tyr Gln Cys His Asp Ile Asp Glu Cys Ser Leu Gly Gln His Gln
    210                 215                 220

Cys Ser Ser Tyr Ala Arg Cys Tyr Asn Ile His Gly Ser Tyr Lys Cys
225                 230                 235                 240

Gln Cys Arg Asp Gly Tyr Glu Gly Asp Gly Leu Asn Cys Val Tyr Ile
                245                 250                 255

Pro Lys Val Met Ile Glu Pro Ser Gly Pro Ile His Met Pro Glu Arg
            260                 265                 270

Asn Gly Thr Ile Ser Lys Gly Asp Gly Gly His Ala Asn Arg Ile Pro
        275                 280                 285

Asp Ala Gly Ser Thr Arg Trp Pro Leu Lys Thr Pro Tyr Ile Pro Pro
    290                 295                 300
```

```
Val Ile Thr Asn Arg Pro Thr Ser Lys Pro Thr Thr Arg Pro Thr Pro
305                 310                 315                 320

Asn Pro Thr Pro Gln Pro Thr Pro Pro Pro Pro Pro Pro Leu Pro Thr
                325                 330                 335

Glu Pro Arg Thr Thr Pro Leu Pro Pro Thr Pro Glu Arg Pro Ser Thr
            340                 345                 350

Arg Pro Thr Thr Ile Ala Pro Ala Thr Ser Thr Thr Thr Arg Val Ile
        355                 360                 365

Thr Val Asp Asn Arg Ile Gln Thr Asp Pro Gln Lys Pro Arg Gly Asp
    370                 375                 380

Val Phe Ile Pro Arg Gln Pro Thr Asn Asp Leu Phe Glu Ile Phe Glu
385                 390                 395                 400

Ile Glu Arg Gly Val Ser Ala Asp Glu Glu Val Lys Asp Asp Pro Gly
                405                 410                 415

Ile Leu Ile His Ser Cys Asn Phe Asp His Gly Leu Cys Gly Trp Ile
            420                 425                 430

Arg Glu Lys Asp Ser Asp Leu His Trp Glu Thr Ala Arg Asp Pro Ala
        435                 440                 445

Gly Gly Gln Tyr Leu Thr Val Ser Ala Ala Lys Ala Pro Gly Gly Lys
    450                 455                 460

Ala Ala Arg Leu Val Leu Arg Leu Gly His Leu Met His Ser Gly Asp
465                 470                 475                 480

Leu Cys Leu Ser Phe Arg His Lys Val Thr Gly Leu His Ser Gly Thr
                485                 490                 495

Leu Gln Val Phe Val Arg Lys His Gly Thr His Gly Ala Ala Leu Trp
            500                 505                 510

Gly Arg Asn Gly Gly His Gly Trp Arg Gln Thr Gln Ile Thr Leu Arg
        515                 520                 525

Gly Ala Asp Val Lys Ser Val Ile Phe Lys Gly Glu Lys Arg Arg Gly
    530                 535                 540

His Thr Gly Glu Ile Gly Leu Asp Asp Val Ser Leu Lys Arg Gly Arg
545                 550                 555                 560

Cys
```

<210> 70
<211> 578
<212> PRT
<213> Mus musculus

<400> 70

```
Met Ala Val Leu Leu Ala Ala Val Leu Ala Ser Ser Leu Tyr Leu Gln
  1               5                  10                  15

Val Ala Ala Asp Phe Asp Gly Arg Trp Pro Arg Gln Ile Val Ser Ser
             20                  25                  30

Ile Gly Leu Cys Arg Tyr Gly Gly Arg Ile Asp Cys Cys Trp Gly Trp
         35                  40                  45

Ala Arg Gln Ser Trp Gly Gln Cys Gln Pro Phe Tyr Val Leu Arg Gln
     50                  55                  60

Arg Leu Ala Arg Ile Arg Cys Gln Leu Lys Ala Val Cys Gln Pro Gln
 65                  70                  75                  80

Cys Lys His Gly Glu Cys Val Gly Pro Asn Lys Cys Lys Cys His Pro
                 85                  90                  95

Gly Phe Ala Gly Lys Thr Cys Asn Gln Asp Leu Asn Glu Cys Gly Leu
            100                 105                 110

Lys Pro Arg Pro Cys Lys His Arg Cys Met Asn Thr Phe Gly Ser Tyr
        115                 120                 125

Lys Cys Tyr Cys Leu Asn Gly Tyr Met Leu Leu Pro Asp Gly Ser Cys
    130                 135                 140

Ser Ser Ala Leu Ser Cys Ser Met Ala Asn Cys Gln Tyr Gly Cys Asp
145                 150                 155                 160

Val Val Lys Gly Gln Val Arg Cys Gln Cys Pro Ser Pro Gly Leu Gln
                165                 170                 175

Leu Ala Pro Asp Gly Arg Thr Cys Val Asp Ile Asp Glu Cys Ala Thr
            180                 185                 190

Gly Arg Val Ser Cys Pro Arg Phe Arg Gln Cys Val Asn Thr Phe Gly
        195                 200                 205

Ser Tyr Ile Cys Lys Cys His Thr Gly Phe Asp Leu Met Tyr Ile Gly
    210                 215                 220

Gly Lys Tyr Gln Cys His Asp Ile Asp Glu Cys Ser Leu Gly Gln His
225                 230                 235                 240

Gln Cys Ser Ser Tyr Ala Arg Cys Tyr Asn Ile His Gly Ser Tyr Lys
                245                 250                 255

Cys Gln Cys Arg Asp Gly Tyr Glu Gly Asp Gly Leu Asn Cys Val Tyr
            260                 265                 270

Ile Pro Lys Val Met Ile Glu Pro Ser Gly Pro Ile His Met Pro Glu
        275                 280                 285

Arg Asn Gly Thr Ile Ser Lys Gly Asp Gly Gly His Ala Asn Arg Ile
    290                 295                 300
```

```
Pro Asp Ala Gly Ser Thr Arg Trp Pro Leu Lys Thr Pro Tyr Ile Pro
305                 310                 315                 320

Pro Val Ile Thr Asn Arg Pro Thr Ser Lys Pro Thr Thr Arg Pro Thr
                325                 330                 335

Pro Asn Pro Thr Pro Gln Pro Thr Pro Pro Pro Pro Pro Pro Leu Pro
            340                 345                 350

Thr Glu Pro Arg Thr Thr Pro Leu Pro Pro Thr Pro Glu Arg Pro Ser
        355                 360                 365

Thr Arg Pro Thr Thr Ile Ala Pro Ala Thr Ser Thr Thr Thr Arg Val
    370                 375                 380

Ile Thr Val Asp Asn Arg Ile Gln Thr Asp Pro Gln Lys Pro Arg Gly
385                 390                 395                 400

Asp Val Phe Ile Pro Arg Gln Pro Thr Asn Asp Leu Phe Glu Ile Phe
                405                 410                 415

Glu Ile Glu Arg Gly Val Ser Ala Asp Glu Glu Val Lys Asp Asp Pro
            420                 425                 430

Gly Ile Leu Ile His Ser Cys Asn Phe Asp His Gly Leu Cys Gly Trp
        435                 440                 445

Ile Arg Glu Lys Asp Ser Asp Leu His Trp Glu Thr Ala Arg Asp Pro
    450                 455                 460

Ala Gly Gly Gln Tyr Leu Thr Val Ser Ala Ala Lys Ala Pro Gly Gly
465                 470                 475                 480

Lys Ala Ala Arg Leu Val Leu Arg Leu Gly His Leu Met His Ser Gly
                485                 490                 495

Asp Leu Cys Leu Ser Phe Arg His Lys Val Thr Gly Leu His Ser Gly
            500                 505                 510

Thr Leu Gln Val Phe Val Arg Lys His Gly Thr His Gly Ala Ala Leu
        515                 520                 525

Trp Gly Arg Asn Gly Gly His Gly Trp Arg Gln Thr Gln Ile Thr Leu
    530                 535                 540

Arg Gly Ala Asp Val Lys Ser Val Ile Phe Lys Gly Glu Lys Arg Arg
545                 550                 555                 560

Gly His Thr Gly Glu Ile Gly Leu Asp Asp Val Ser Leu Lys Arg Gly
                565                 570                 575

Arg Cys
```

<210> 71

<211> 592
<212> PRT
<213> Mus musculus

<400> 71

```
Met Ala Val Leu Leu Ala Ala Val Leu Ala Ser Ser Leu Tyr Leu Gln
  1               5                  10                  15

Val Ala Ala Asp Phe Asp Gly Arg Trp Pro Arg Gln Ile Val Ser Ser
             20                  25                  30

Ile Gly Leu Cys Arg Tyr Gly Gly Arg Ile Asp Cys Cys Trp Gly Trp
         35                  40                  45

Ala Arg Gln Ser Trp Gly Gln Cys Gln Pro Val Cys Gln Pro Gln Cys
     50                  55                  60

Lys His Gly Glu Cys Val Gly Pro Asn Lys Cys Lys Cys His Pro Gly
 65                  70                  75                  80

Phe Ala Gly Lys Thr Cys Asn Gln Asp Glu Ser Phe His Pro Thr Pro
                 85                  90                  95

Leu Asp Gln Gly Ser Glu Gln Pro Leu Phe Gln Pro Pro Asp His Gln
            100                 105                 110

Ala Thr Asn Val Pro Ser Arg Asp Leu Asn Glu Cys Gly Leu Lys Pro
        115                 120                 125

Arg Pro Cys Lys His Arg Cys Met Asn Thr Phe Gly Ser Tyr Lys Cys
    130                 135                 140

Tyr Cys Leu Asn Gly Tyr Met Leu Leu Pro Asp Gly Ser Cys Ser Ser
145                 150                 155                 160

Ala Leu Ser Cys Ser Met Ala Asn Cys Gln Tyr Gly Cys Asp Val Val
                165                 170                 175

Lys Gly Gln Val Arg Cys Gln Cys Pro Ser Pro Gly Leu Gln Leu Ala
            180                 185                 190

Pro Asp Gly Arg Thr Cys Val Asp Ile Asp Glu Cys Ala Thr Gly Arg
        195                 200                 205

Val Ser Cys Pro Arg Phe Arg Gln Cys Val Asn Thr Phe Gly Ser Tyr
    210                 215                 220

Ile Cys Lys Cys His Thr Gly Phe Asp Leu Met Tyr Ile Gly Gly Lys
225                 230                 235                 240

Tyr Gln Cys His Asp Ile Asp Glu Cys Ser Leu Gly Gln His Gln Cys
                245                 250                 255

Ser Ser Tyr Ala Arg Cys Tyr Asn Ile His Gly Ser Tyr Lys Cys Gln
            260                 265                 270

Cys Arg Asp Gly Tyr Glu Gly Asp Gly Leu Asn Cys Val Tyr Ile Pro
```

```
        275                 280                 285

Lys Val Met Ile Glu Pro Ser Gly Pro Ile His Met Pro Glu Arg Asn
    290                 295                 300

Gly Thr Ile Ser Lys Gly Asp Gly Gly His Ala Asn Arg Ile Pro Asp
305                 310                 315                 320

Ala Gly Ser Thr Arg Trp Pro Leu Lys Thr Pro Tyr Ile Pro Pro Val
                325                 330                 335

Ile Thr Asn Arg Pro Thr Ser Lys Pro Thr Thr Arg Pro Thr Pro Asn
            340                 345                 350

Pro Thr Pro Gln Pro Thr Pro Pro Pro Pro Pro Pro Leu Pro Thr Glu
        355                 360                 365

Pro Arg Thr Thr Pro Leu Pro Pro Thr Pro Glu Arg Pro Ser Thr Arg
    370                 375                 380

Pro Thr Thr Ile Ala Pro Ala Thr Ser Thr Thr Thr Arg Val Ile Thr
385                 390                 395                 400

Val Asp Asn Arg Ile Gln Thr Asp Pro Gln Lys Pro Arg Gly Asp Val
                405                 410                 415

Phe Ile Pro Arg Gln Pro Thr Asn Asp Leu Phe Glu Ile Phe Glu Ile
            420                 425                 430

Glu Arg Gly Val Ser Ala Asp Glu Glu Val Lys Asp Asp Pro Gly Ile
        435                 440                 445

Leu Ile His Ser Cys Asn Phe Asp His Gly Leu Cys Gly Trp Ile Arg
    450                 455                 460

Glu Lys Asp Ser Asp Leu His Trp Glu Thr Ala Arg Asp Pro Ala Gly
465                 470                 475                 480

Gly Gln Tyr Leu Thr Val Ser Ala Ala Lys Ala Pro Gly Gly Lys Ala
                485                 490                 495

Ala Arg Leu Val Leu Arg Leu Gly His Leu Met His Ser Gly Asp Leu
            500                 505                 510

Cys Leu Ser Phe Arg His Lys Val Thr Gly Leu His Ser Gly Thr Leu
        515                 520                 525

Gln Val Phe Val Arg Lys His Gly Thr His Gly Ala Ala Leu Trp Gly
    530                 535                 540

Arg Asn Gly Gly His Gly Trp Arg Gln Thr Gln Ile Thr Leu Arg Gly
545                 550                 555                 560

Ala Asp Val Lys Ser Val Ile Phe Lys Gly Glu Lys Arg Arg Gly His
                565                 570                 575

Thr Gly Glu Ile Gly Leu Asp Asp Val Ser Leu Lys Arg Gly Arg Cys
```

580 585 590

<210> 72
<211> 609
<212> PRT
<213> Mus musculus

<400> 72

```
Met Ala Val Leu Leu Ala Ala Val Leu Ala Ser Ser Leu Tyr Leu Gln
  1               5                  10                  15

Val Ala Ala Asp Phe Asp Gly Arg Trp Pro Arg Gln Ile Val Ser Ser
             20                  25                  30

Ile Gly Leu Cys Arg Tyr Gly Gly Arg Ile Asp Cys Cys Trp Gly Trp
         35                  40                  45

Ala Arg Gln Ser Trp Gly Gln Cys Gln Pro Phe Tyr Val Leu Arg Gln
     50                  55                  60

Arg Leu Ala Arg Ile Arg Cys Gln Leu Lys Ala Val Cys Gln Pro Gln
 65                  70                  75                  80

Cys Lys His Gly Glu Cys Val Gly Pro Asn Lys Cys Lys Cys His Pro
                 85                  90                  95

Gly Phe Ala Gly Lys Thr Cys Asn Gln Asp Glu Ser Phe His Pro Thr
            100                 105                 110

Pro Leu Asp Gln Gly Ser Glu Gln Pro Leu Phe Gln Pro Pro Asp His
        115                 120                 125

Gln Ala Thr Asn Val Pro Ser Arg Asp Leu Asn Glu Cys Gly Leu Lys
    130                 135                 140

Pro Arg Pro Cys Lys His Arg Cys Met Asn Thr Phe Gly Ser Tyr Lys
145                 150                 155                 160

Cys Tyr Cys Leu Asn Gly Tyr Met Leu Leu Pro Asp Gly Ser Cys Ser
                165                 170                 175

Ser Ala Leu Ser Cys Ser Met Ala Asn Cys Gln Tyr Gly Cys Asp Val
            180                 185                 190

Val Lys Gly Gln Val Arg Cys Gln Cys Pro Ser Pro Gly Leu Gln Leu
        195                 200                 205

Ala Pro Asp Gly Arg Thr Cys Val Asp Ile Asp Glu Cys Ala Thr Gly
    210                 215                 220

Arg Val Ser Cys Pro Arg Phe Arg Gln Cys Val Asn Thr Phe Gly Ser
225                 230                 235                 240
```

```
Tyr Ile Cys Lys Cys His Thr Gly Phe Asp Leu Met Tyr Ile Gly Gly
                245                 250                 255

Lys Tyr Gln Cys His Asp Ile Asp Glu Cys Ser Leu Gly Gln His Gln
            260                 265                 270

Cys Ser Ser Tyr Ala Arg Cys Tyr Asn Ile His Gly Ser Tyr Lys Cys
        275                 280                 285

Gln Cys Arg Asp Gly Tyr Glu Gly Asp Gly Leu Asn Cys Val Tyr Ile
    290                 295                 300

Pro Lys Val Met Ile Glu Pro Ser Gly Pro Ile His Met Pro Glu Arg
305                 310                 315                 320

Asn Gly Thr Ile Ser Lys Gly Asp Gly Gly His Ala Asn Arg Ile Pro
                325                 330                 335

Asp Ala Gly Ser Thr Arg Trp Pro Leu Lys Thr Pro Tyr Ile Pro Pro
            340                 345                 350

Val Ile Thr Asn Arg Pro Thr Ser Lys Pro Thr Thr Arg Pro Thr Pro
        355                 360                 365

Asn Pro Thr Pro Gln Pro Thr Pro Pro Pro Pro Pro Pro Leu Pro Thr
    370                 375                 380

Glu Pro Arg Thr Thr Pro Leu Pro Pro Thr Pro Glu Arg Pro Ser Thr
385                 390                 395                 400

Arg Pro Thr Thr Ile Ala Pro Ala Thr Ser Thr Thr Thr Arg Val Ile
                405                 410                 415

Thr Val Asp Asn Arg Ile Gln Thr Asp Pro Gln Lys Pro Arg Gly Asp
            420                 425                 430

Val Phe Ile Pro Arg Gln Pro Thr Asn Asp Leu Phe Glu Ile Phe Glu
        435                 440                 445

Ile Glu Arg Gly Val Ser Ala Asp Glu Glu Val Lys Asp Asp Pro Gly
    450                 455                 460

Ile Leu Ile His Ser Cys Asn Phe Asp His Gly Leu Cys Gly Trp Ile
465                 470                 475                 480

Arg Glu Lys Asp Ser Asp Leu His Trp Glu Thr Ala Arg Asp Pro Ala
                485                 490                 495

Gly Gly Gln Tyr Leu Thr Val Ser Ala Ala Lys Ala Pro Gly Gly Lys
            500                 505                 510

Ala Ala Arg Leu Val Leu Arg Leu Gly His Leu Met His Ser Gly Asp
        515                 520                 525

Leu Cys Leu Ser Phe Arg His Lys Val Thr Gly Leu His Ser Gly Thr
    530                 535                 540
```

```
Leu Gln Val Phe Val Arg Lys His Gly Thr His Gly Ala Ala Leu Trp
545                 550                 555                 560

Gly Arg Asn Gly Gly His Gly Trp Arg Gln Thr Gln Ile Thr Leu Arg
                565                 570                 575

Gly Ala Asp Val Lys Ser Val Ile Phe Lys Gly Glu Lys Arg Arg Gly
            580                 585                 590

His Thr Gly Glu Ile Gly Leu Asp Asp Val Ser Leu Lys Arg Gly Arg
        595                 600                 605

Cys
```

<210> 73
<211> 550
<212> PRT
<213> Mus musculus

<400> 73

```
Met Gln Pro Pro Trp Gly Leu Ala Leu Pro Leu Leu Leu Pro Trp Val
  1               5                  10                  15

Thr Gly Gly Val Gly Thr Ser Pro Trp Asp Tyr Gly Leu Ser Ala Leu
            20                  25                  30

Ala His Gln Pro Gly Val Cys Gln Tyr Gly Thr Lys Met Ala Cys Cys
        35                  40                  45

Tyr Gly Trp Lys Arg Asn Asn Lys Gly Val Cys Glu Ala Met Cys Glu
    50                  55                  60

Pro Arg Cys Lys Phe Gly Glu Cys Val Gly Pro Asn Lys Cys Arg Cys
65                  70                  75                  80

Phe Pro Gly Tyr Thr Gly Lys Thr Cys Thr Gln Asp Val Asn Glu Cys
                85                  90                  95

Gly Val Lys Pro Arg Pro Cys Gln His Arg Cys Val Asn Thr His Gly
            100                 105                 110

Ser Tyr Lys Cys Phe Cys Leu Ser Gly His Met Leu Leu Pro Asp Ala
        115                 120                 125

Thr Cys Ser Asn Ser Arg Thr Cys Ala Arg Leu Asn Cys Gln Tyr Gly
    130                 135                 140

Cys Glu Asp Thr Glu Glu Gly Pro Arg Cys Val Cys Pro Ser Ser Gly
145                 150                 155                 160

Leu Arg Leu Gly Pro Asn Gly Arg Val Cys Leu Asp Ile Asp Glu Cys
                165                 170                 175

Ala Ser Ser Lys Ala Val Cys Pro Ser Asn Arg Arg Cys Val Asn Thr
            180                 185                 190
```

```
Phe Gly Ser Tyr Tyr Cys Lys Cys His Ile Gly Phe Glu Leu Lys Tyr
        195                 200                 205

Ile Gly Arg Arg Tyr Asp Cys Val Asp Ile Asn Glu Cys Ala Leu Asn
    210                 215                 220

Thr His Pro Cys Ser Pro His Ala Asn Cys Leu Asn Thr Arg Gly Ser
225                 230                 235                 240

Phe Lys Cys Lys Cys Lys Gln Gly Tyr Arg Gly Asn Gly Leu Gln Cys
                245                 250                 255

Ser Val Ile Pro Glu His Ser Val Lys Glu Ile Leu Thr Ala Pro Gly
            260                 265                 270

Thr Ile Lys Asp Arg Ile Lys Lys Leu Leu Ala His Lys Arg Thr Met
        275                 280                 285

Lys Lys Lys Val Lys Leu Lys Met Val Thr Pro Arg Pro Ala Ser Thr
    290                 295                 300

Arg Val Pro Lys Val Asn Leu Pro Tyr Ser Ser Glu Glu Gly Val Ser
305                 310                 315                 320

Arg Gly Arg Asn Tyr Asp Gly Glu Gln Lys Lys Lys Glu Glu Gly Lys
                325                 330                 335

Arg Glu Arg Leu Glu Glu Glu Lys Gly Glu Lys Thr Leu Arg Asn Glu
            340                 345                 350

Val Glu Gln Glu Arg Thr Leu Arg Gly Asp Val Phe Ser Pro Lys Val
        355                 360                 365

Asn Glu Ala Glu Asp Leu Asp Leu Val Tyr Val Gln Arg Lys Glu Leu
    370                 375                 380

Asn Ser Lys Leu Lys His Lys Asp Leu Asn Ile Ser Val Asp Cys Ser
385                 390                 395                 400

Phe Asp Leu Gly Val Cys Asp Trp Lys Gln Asp Arg Glu Asp Asp Phe
                405                 410                 415

Asp Trp His Pro Ala Asp Arg Asp Asn Asp Val Gly Tyr Tyr Met Ala
            420                 425                 430

Val Pro Ala Leu Ala Gly His Lys Lys Asn Ile Gly Arg Leu Lys Leu
        435                 440                 445

Leu Leu Pro Asn Leu Thr Pro Gln Ser Asn Phe Cys Leu Leu Phe Asp
    450                 455                 460

Tyr Arg Leu Ala Gly Asp Lys Val Gly Lys Leu Arg Val Phe Val Lys
465                 470                 475                 480

Asn Ser Asn Asn Ala Leu Ala Trp Glu Glu Thr Lys Asn Glu Asp Gly
                485                 490                 495
```

```
Arg Trp Arg Thr Gly Lys Ile Gln Leu Tyr Gln Gly Ile Asp Thr Thr
            500                 505                 510

Lys Ser Val Ile Phe Glu Ala Glu Arg Gly Lys Gly Lys Thr Gly Glu
        515                 520                 525

Ile Ala Val Asp Gly Val Leu Leu Val Ser Gly Leu Cys Pro Asp Asp
    530                 535                 540

Phe Leu Ser Val Glu Gly
545                 550


<210> 74
<211> 158
<212> PRT
<213> Homo sapiens

<400> 74
Gly Asn Cys Asp Phe Glu Glu Gly Asn Thr Cys Gly Trp His Gln Asp
  1               5                  10                  15

Ser Asn Asp Asp Gly Pro Trp Glu Arg Val Ser Ser Ala Thr Arg Asn
            20                  25                  30

Asp Gly Pro Asn Arg Asp His Thr Thr Gly Asn Gly His Tyr Met Phe
        35                  40                  45

Phe Glu Thr Ser Ser Gly Lys Pro Gly Gln Thr Ala Arg Leu Leu Ser
     50                  55                  60

Pro Pro Leu Tyr Glu Asn Arg Ser Thr His Cys Leu Thr Phe Trp Tyr
 65                  70                  75                  80

Tyr Met Tyr Gly Ser Gly Val Gly Thr Leu Asn Val Tyr Val Arg Val
                85                  90                  95

Asn Asn Gly Pro Gln Asp Thr Leu Leu Trp Ser Arg Ser Gly Thr Gln
            100                 105                 110

Gly Gly Gln Trp Leu Gln Ala Glu Val Ala Leu Ser Thr Ser Pro Gln
        115                 120                 125

Pro Phe Gln Val Val Phe Glu Gly Thr Arg Gly Gly Gly Pro Ser Gly
    130                 135                 140

Tyr Ile Ala Leu Asp Asp Ile Leu Leu Ser Asn Gly Pro Cys
145                 150                 155


<210> 75
<211> 159
<212> PRT
<213> Homo sapiens

<400> 75
```

```
Cys Asp Phe Glu Asp Gly Ser His Cys Gly Trp Ser Gln Asp Ser Gly
  1               5                  10                  15

Asp Asp Leu Asp Trp Thr Arg Val Asn Ser Ala Thr Gly Gly Ser Thr
             20                  25                  30

Gly Pro Arg Gly Asp His Thr Thr Gly Asn Gly His Tyr Met Tyr Val
         35                  40                  45

Asp Thr Ser Ser Gly Gln Glu Gly Gln Thr Ala Arg Leu Leu Ser Pro
     50                  55                  60

Pro Leu Pro Pro Lys Arg Ser Pro Cys Cys Leu Thr Phe Trp Tyr His
 65                  70                  75                  80

Met Tyr Gly Ser Gly Val Gly Thr Leu Asn Val Tyr Val Arg Glu Asn
                 85                  90                  95

Gly Gly Pro Ser Asp Arg Leu Leu Trp Ser Arg Ser Gly His Gln Gly
            100                 105                 110

Gly Ser Trp Leu Leu Ala Glu Val Thr Leu Pro Thr Ser Thr Lys Pro
        115                 120                 125

Phe Gln Val Val Phe Glu Gly Thr Arg Gly Gly Gly Ser Arg Gly Gly
    130                 135                 140

Ile Ala Leu Asp Asp Ile Ser Leu Ser Glu Gly Pro Cys Asn Gln
145                 150                 155


<210> 76
<211> 41
<212> PRT
<213> Homo sapiens

<400> 76
Asp Ile Asp Glu Cys Ala Ser Gly Asn Pro Cys Gln Asn Gly Gly Thr
  1               5                  10                  15

Cys Val Asn Thr Val Gly Ser Tyr Arg Cys Glu Glu Cys Pro Pro Gly
             20                  25                  30

Tyr Thr Leu Asp Gly Arg Asn Cys Glu
         35                  40


<210> 77
<211> 709
<212> PRT
<213> Homo sapiens

<400> 77
Met Ser Phe Pro Lys Ala Pro Leu Lys Arg Phe Asn Asp Pro Ser Gly
  1               5                  10                  15

Cys Ala Pro Ser Pro Gly Ala Tyr Asp Val Lys Thr Leu Glu Val Leu
```

```
                20                  25                  30
Lys Gly Pro Val Ser Phe Gln Lys Ser Gln Arg Phe Lys Gln Gln Lys
        35                  40                  45
Glu Ser Lys Gln Asn Leu Asn Val Asp Lys Asp Thr Thr Leu Pro Ala
    50                  55                  60
Ser Ala Arg Lys Val Lys Ser Ser Glu Ser Lys Ile Arg Val Leu Leu
65                  70                  75                  80
Gln Glu Arg Gly Ala Gln Asp Ser Arg Ile Gln Asp Leu Glu Thr Glu
                85                  90                  95
Leu Glu Lys Met Glu Ala Arg Leu Asn Ala Ala Leu Arg Glu Lys Thr
            100                 105                 110
Ser Leu Ser Ala Asn Asn Ala Thr Leu Glu Lys Gln Leu Ile Glu Leu
        115                 120                 125
Thr Arg Thr Asn Glu Leu Leu Lys Ser Lys Phe Ser Glu Asn Gly Asn
    130                 135                 140
Gln Lys Asn Leu Arg Ile Leu Ser Leu Glu Leu Met Lys Leu Arg Asn
145                 150                 155                 160
Lys Arg Glu Thr Lys Met Arg Gly Met Met Ala Lys Gln Glu Gly Met
                165                 170                 175
Glu Met Lys Leu Gln Val Thr Gln Arg Ser Leu Glu Glu Ser Gln Gly
            180                 185                 190
Lys Ile Ala Gln Leu Glu Gly Lys Leu Val Ser Ile Glu Lys Glu Lys
        195                 200                 205
Ile Asp Glu Lys Ser Glu Thr Glu Lys Leu Leu Glu Tyr Ile Glu Glu
    210                 215                 220
Ile Ser Cys Ala Ser Asp Gln Val Glu Lys Tyr Lys Leu Asp Ile Ala
225                 230                 235                 240
Gln Leu Glu Glu Asn Leu Lys Glu Lys Asn Asp Glu Ile Leu Ser Leu
                245                 250                 255
Lys Gln Ser Leu Glu Glu Asn Ile Val Ile Leu Ser Lys Gln Val Glu
            260                 265                 270
Asp Leu Asn Val Lys Cys Gln Leu Leu Glu Lys Glu Lys Glu Asp His
        275                 280                 285
Val Asn Arg Asn Arg Glu His Asn Glu Asn Leu Asn Ala Glu Met Gln
    290                 295                 300
Asn Leu Lys Gln Lys Phe Ile Leu Glu Gln Gln Glu Arg Glu Lys Leu
305                 310                 315                 320
Gln Gln Lys Glu Leu Gln Ile Asp Ser Leu Leu Gln Gln Glu Lys Glu
```

325 330 335

Leu Ser Ser Ser Leu His Gln Lys Leu Cys Ser Phe Gln Glu Glu Met
340 345 350

Val Lys Glu Lys Asn Leu Phe Glu Glu Glu Leu Lys Gln Thr Leu Asp
355 360 365

Glu Leu Asp Lys Leu Gln Gln Lys Glu Glu Gln Ala Glu Arg Leu Val
370 375 380

Lys Gln Leu Glu Glu Glu Ala Lys Ser Arg Ala Glu Glu Leu Lys Leu
385 390 395 400

Leu Glu Glu Lys Leu Lys Gly Lys Glu Ala Glu Leu Glu Lys Ser Ser
405 410 415

Ala Ala His Thr Gln Ala Thr Leu Leu Leu Gln Glu Lys Tyr Asp Ser
420 425 430

Met Val Gln Ser Leu Glu Asp Val Thr Ala Gln Phe Glu Ser Tyr Lys
435 440 445

Ala Leu Thr Ala Ser Glu Ile Glu Asp Leu Lys Leu Glu Asn Ser Ser
450 455 460

Leu Gln Glu Lys Ala Ala Lys Ala Gly Lys Asn Ala Glu Asp Val Gln
465 470 475 480

His Gln Ile Leu Ala Thr Glu Ser Ser Asn Gln Glu Tyr Val Arg Met
485 490 495

Leu Leu Asp Leu Gln Thr Lys Ser Ala Leu Lys Glu Thr Glu Ile Lys
500 505 510

Glu Ile Thr Val Ser Phe Leu Gln Lys Ile Thr Asp Leu Gln Asn Gln
515 520 525

Leu Lys Gln Gln Glu Glu Asp Phe Arg Lys Gln Leu Glu Asp Glu Glu
530 535 540

Gly Arg Lys Ala Glu Lys Glu Asn Thr Thr Ala Glu Leu Thr Glu Glu
545 550 555 560

Ile Asn Lys Trp Arg Leu Leu Tyr Glu Glu Leu Tyr Asn Lys Thr Lys
565 570 575

Pro Phe Gln Leu Gln Leu Asp Ala Phe Glu Val Glu Lys Gln Ala Leu
580 585 590

Leu Asn Glu His Gly Ala Ala Gln Glu Gln Leu Asn Lys Ile Arg Asp
595 600 605

Ser Tyr Ala Lys Leu Leu Gly His Gln Asn Leu Lys Gln Lys Ile Lys
610 615 620

His Val Val Lys Leu Lys Asp Glu Asn Ser Gln Leu Lys Ser Glu Val

625 630 635 640

Ser Lys Leu Arg Cys Gln Leu Ala Lys Lys Lys Gln Ser Glu Thr Lys
645 650 655

Leu Gln Glu Glu Leu Asn Lys Val Leu Gly Ile Lys His Phe Asp Pro
660 665 670

Ser Lys Ala Phe His His Glu Ser Lys Glu Asn Phe Ala Leu Lys Thr
675 680 685

Pro Leu Lys Glu Gly Asn Thr Asn Cys Tyr Arg Ala Pro Met Glu Cys
690 695 700

Gln Glu Ser Trp Lys
705

<210> 78
<211> 725
<212> PRT
<213> Homo sapiens

<400> 78
Met Ser Phe Pro Lys Ala Pro Leu Lys Arg Phe Asn Asp Pro Ser Gly
1 5 10 15

Cys Ala Pro Ser Pro Gly Ala Tyr Asp Val Lys Thr Leu Glu Val Leu
20 25 30

Lys Gly Pro Val Ser Phe Gln Lys Ser Gln Arg Phe Lys Gln Gln Lys
35 40 45

Glu Ser Lys Gln Asn Leu Asn Val Asp Lys Asp Thr Thr Leu Pro Ala
50 55 60

Ser Ala Arg Lys Val Lys Ser Ser Glu Ser Lys Lys Glu Ser Gln Lys
65 70 75 80

Asn Asp Lys Asp Leu Lys Ile Leu Glu Lys Glu Ile Arg Val Leu Leu
85 90 95

Gln Glu Arg Gly Ala Gln Asp Arg Arg Ile Gln Asp Leu Glu Thr Glu
100 105 110

Leu Glu Lys Met Glu Ala Arg Leu Asn Ala Ala Leu Arg Glu Lys Thr
115 120 125

Ser Leu Ser Ala Asn Asn Ala Thr Leu Glu Lys Gln Leu Ile Glu Leu
130 135 140

Thr Arg Thr Asn Glu Leu Leu Lys Ser Lys Phe Ser Glu Asn Gly Asn
145 150 155 160

Gln Lys Asn Leu Arg Ile Leu Ser Leu Glu Leu Met Lys Leu Arg Asn
165 170 175

```
Lys Arg Glu Thr Lys Met Arg Gly Met Met Ala Lys Gln Glu Gly Met
            180                 185                 190

Glu Met Lys Leu Gln Val Thr Gln Arg Ser Leu Glu Glu Ser Gln Gly
        195                 200                 205

Lys Ile Ala Gln Leu Glu Gly Lys Leu Val Ser Ile Glu Lys Glu Lys
    210                 215                 220

Ile Asp Glu Lys Ser Glu Thr Glu Lys Leu Leu Glu Tyr Ile Glu Glu
225                 230                 235                 240

Ile Ser Cys Ala Ser Asp Gln Val Glu Lys Tyr Lys Leu Asp Ile Ala
                245                 250                 255

Gln Leu Glu Glu Asn Leu Lys Glu Lys Asn Asp Glu Ile Leu Ser Leu
            260                 265                 270

Lys Gln Ser Leu Glu Asp Asn Ile Val Ile Leu Ser Lys Gln Val Glu
        275                 280                 285

Asp Leu Asn Val Lys Cys Gln Leu Leu Glu Thr Glu Lys Glu Asp His
    290                 295                 300

Val Asn Arg Asn Arg Glu His Asn Glu Asn Leu Asn Ala Glu Met Gln
305                 310                 315                 320

Asn Leu Glu Gln Lys Phe Ile Leu Glu Gln Arg Glu His Glu Lys Leu
                325                 330                 335

Gln Gln Lys Glu Leu Gln Ile Asp Ser Leu Leu Gln Gln Glu Lys Glu
            340                 345                 350

Leu Ser Ser Ser Leu His Gln Lys Leu Cys Ser Phe Gln Glu Glu Met
        355                 360                 365

Val Lys Glu Lys Asn Leu Phe Glu Glu Glu Leu Lys Gln Thr Leu Asp
    370                 375                 380

Glu Leu Asp Lys Leu Gln Gln Lys Glu Glu Gln Ala Glu Arg Leu Val
385                 390                 395                 400

Lys Gln Leu Glu Glu Glu Ala Lys Ser Arg Ala Glu Glu Leu Lys Leu
                405                 410                 415

Leu Glu Glu Lys Leu Lys Gly Lys Glu Ala Glu Leu Glu Lys Ser Ser
            420                 425                 430

Ala Ala His Thr Gln Ala Thr Leu Leu Leu Gln Glu Lys Tyr Asp Ser
        435                 440                 445

Met Val Gln Ser Leu Glu Asp Val Thr Ala Gln Phe Glu Ser Tyr Lys
    450                 455                 460

Ala Leu Thr Ala Ser Glu Ile Glu Asp Leu Lys Leu Glu Asn Ser Ser
465                 470                 475                 480
```

```
Leu Gln Glu Lys Ala Ala Lys Ala Gly Lys Asn Ala Glu Asp Val Gln
                485                 490                 495

His Gln Ile Leu Ala Thr Glu Ser Ser Asn Gln Glu Tyr Val Arg Met
            500                 505                 510

Leu Leu Asp Leu Gln Thr Lys Ser Ala Leu Lys Glu Thr Glu Ile Lys
        515                 520                 525

Glu Ile Thr Val Ser Phe Leu Gln Lys Ile Thr Asp Leu Gln Asn Gln
    530                 535                 540

Leu Lys Gln Gln Glu Glu Asp Phe Arg Lys Gln Leu Glu Asp Glu Glu
545                 550                 555                 560

Gly Arg Lys Ala Glu Lys Glu Asn Thr Thr Ala Glu Leu Thr Glu Glu
                565                 570                 575

Ile Asn Lys Trp Arg Leu Leu Tyr Glu Glu Leu Tyr Asn Lys Thr Lys
            580                 585                 590

Pro Phe Gln Leu Gln Leu Asp Ala Phe Glu Val Glu Lys Gln Ala Leu
        595                 600                 605

Leu Asn Glu His Gly Ala Ala Gln Glu Gln Leu Asn Lys Ile Arg Asp
    610                 615                 620

Ser Tyr Ala Lys Leu Leu Gly His Gln Asn Leu Lys Gln Lys Ile Lys
625                 630                 635                 640

His Val Val Lys Leu Lys Asp Glu Asn Ser Gln Leu Lys Ser Glu Val
                645                 650                 655

Ser Lys Leu Arg Cys Gln Leu Ala Lys Lys Lys Gln Ser Glu Thr Lys
            660                 665                 670

Leu Gln Glu Glu Leu Asn Lys Val Leu Gly Ile Lys His Phe Asp Pro
        675                 680                 685

Ser Lys Ala Phe His His Glu Ser Lys Glu Asn Phe Ala Leu Lys Thr
    690                 695                 700

Pro Leu Lys Glu Gly Asn Thr Asn Cys Tyr Arg Ala Pro Met Glu Cys
705                 710                 715                 720

Gln Glu Ser Trp Lys
                725
```

<210> 79
<211> 725
<212> PRT
<213> Homo sapiens

<400> 79

```
Met Ser Phe Pro Lys Ala Pro Leu Lys Arg Phe Asn Asp Pro Ser Gly
  1               5                  10                  15
```

```
Cys Ala Pro Ser Pro Gly Ala Tyr Asp Val Lys Thr Leu Glu Val Leu
             20                  25                  30

Lys Gly Pro Val Ser Phe Gln Lys Ser Gln Arg Phe Lys Gln Gln Lys
         35                  40                  45

Glu Ser Lys Gln Asn Leu Asn Val Asp Lys Asp Thr Thr Leu Pro Ala
     50                  55                  60

Ser Ala Arg Lys Val Lys Ser Ser Glu Ser Lys Lys Glu Ser Gln Lys
 65                  70                  75                  80

Asn Asp Lys Asp Leu Lys Ile Leu Glu Lys Glu Ile Arg Val Leu Leu
                 85                  90                  95

Gln Glu Arg Gly Ala Gln Asp Arg Arg Ile Gln Asp Leu Glu Thr Glu
            100                 105                 110

Leu Glu Lys Met Glu Ala Arg Leu Asn Ala Ala Leu Arg Glu Lys Thr
        115                 120                 125

Ser Leu Ser Ala Asn Asn Ala Thr Leu Glu Lys Gln Leu Ile Glu Leu
    130                 135                 140

Thr Arg Thr Asn Glu Leu Leu Lys Ser Lys Phe Ser Glu Asn Gly Asn
145                 150                 155                 160

Gln Lys Asn Leu Arg Ile Leu Ser Leu Glu Leu Met Lys Leu Arg Asn
                165                 170                 175

Lys Arg Glu Thr Lys Met Arg Gly Met Met Ala Lys Gln Glu Gly Met
            180                 185                 190

Glu Met Lys Leu Gln Val Thr Gln Arg Ser Leu Glu Glu Ser Gln Gly
        195                 200                 205

Lys Ile Ala Gln Leu Glu Gly Lys Leu Val Ser Ile Glu Lys Glu Lys
    210                 215                 220

Ile Asp Glu Lys Ser Glu Thr Glu Lys Leu Leu Glu Tyr Ile Glu Glu
225                 230                 235                 240

Ile Ser Cys Ala Ser Asp Gln Val Glu Lys Tyr Lys Leu Asp Ile Ala
                245                 250                 255

Gln Leu Glu Glu Asn Leu Lys Glu Lys Asn Asp Glu Ile Leu Ser Leu
            260                 265                 270

Lys Gln Ser Leu Glu Glu Asn Ile Val Ile Leu Ser Lys Gln Val Glu
        275                 280                 285

Asp Leu Asn Val Lys Cys Gln Leu Leu Glu Lys Glu Lys Glu Asp His
    290                 295                 300

Val Asn Arg Asn Arg Glu His Asn Glu Asn Leu Asn Ala Glu Met Gln
305                 310                 315                 320
```

```
Asn Leu Lys Gln Lys Phe Ile Leu Glu Gln Gln Glu His Glu Lys Leu
                325                 330                 335

Gln Gln Lys Glu Leu Gln Ile Asp Ser Leu Leu Gln Gln Glu Lys Glu
            340                 345                 350

Leu Ser Ser Ser Leu His Gln Lys Leu Cys Ser Phe Gln Glu Glu Met
        355                 360                 365

Val Lys Glu Lys Asn Leu Phe Glu Glu Glu Leu Lys Gln Thr Leu Asp
    370                 375                 380

Glu Leu Asp Lys Leu Gln Gln Lys Glu Glu Gln Ala Glu Arg Leu Val
385                 390                 395                 400

Lys Gln Leu Glu Glu Glu Ala Lys Ser Arg Ala Glu Glu Leu Lys Leu
                405                 410                 415

Leu Glu Glu Lys Leu Lys Gly Lys Glu Ala Glu Leu Glu Lys Ser Ser
            420                 425                 430

Ala Ala His Thr Gln Ala Thr Leu Leu Leu Gln Glu Lys Tyr Asp Ser
        435                 440                 445

Met Val Gln Ser Leu Glu Asp Val Thr Ala Gln Phe Glu Ser Tyr Lys
    450                 455                 460

Ala Leu Thr Ala Ser Glu Ile Glu Asp Leu Lys Leu Glu Asn Ser Ser
465                 470                 475                 480

Leu Gln Glu Lys Ala Ala Lys Ala Gly Lys Asn Ala Glu Asp Val Gln
                485                 490                 495

His Gln Ile Leu Ala Thr Glu Ser Ser Asn Gln Glu Tyr Val Arg Met
            500                 505                 510

Leu Leu Asp Leu Gln Thr Lys Ser Ala Leu Lys Glu Thr Glu Ile Lys
        515                 520                 525

Glu Ile Thr Val Ser Phe Leu Gln Lys Ile Thr Asp Leu Gln Asn Gln
    530                 535                 540

Leu Lys Gln Gln Glu Glu Asp Phe Arg Lys Gln Leu Glu Asp Glu Glu
545                 550                 555                 560

Gly Arg Lys Ala Glu Lys Glu Asn Thr Thr Ala Glu Leu Thr Glu Glu
                565                 570                 575

Ile Asn Lys Trp Arg Leu Leu Tyr Glu Glu Leu Tyr Asn Lys Thr Lys
            580                 585                 590

Pro Phe Gln Leu Gln Leu Asp Ala Phe Glu Val Glu Lys Gln Ala Leu
        595                 600                 605

Leu Asn Glu His Gly Ala Ala Gln Glu Gln Leu Asn Lys Ile Arg Asp
    610                 615                 620
```

```
Ser Tyr Ala Lys Leu Leu Gly His Gln Asn Leu Lys Gln Lys Ile Lys
625                 630                 635                 640

His Val Val Lys Leu Lys Asp Glu Asn Ser Gln Leu Lys Ser Glu Val
                645                 650                 655

Ser Lys Leu Arg Cys Gln Leu Ala Lys Lys Lys Gln Ser Glu Thr Lys
            660                 665                 670

Leu Gln Glu Glu Leu Asn Lys Val Leu Gly Ile Lys His Phe Asp Pro
        675                 680                 685

Ser Lys Ala Phe His His Glu Ser Lys Glu Asn Phe Ala Leu Lys Thr
    690                 695                 700

Pro Leu Lys Glu Gly Asn Thr Asn Cys Tyr Arg Ala Pro Met Glu Cys
705                 710                 715                 720

Gln Glu Ser Trp Lys
                725
```

<210> 80
<211> 724
<212> PRT
<213> Homo sapiens

<400> 80

```
Met Ser Phe Pro Lys Ala Pro Leu Lys Arg Phe Asn Asp Pro Ser Gly
  1               5                  10                  15

Cys Ala Pro Ser Pro Gly Ala Tyr Asp Val Lys Thr Leu Glu Val Leu
            20                  25                  30

Lys Gly Pro Val Ser Phe Gln Lys Ser Gln Arg Phe Lys Gln Gln Lys
        35                  40                  45

Glu Ser Lys Gln Asn Leu Asn Val Asp Lys Asp Thr Thr Leu Pro Ala
    50                  55                  60

Ser Ala Arg Lys Val Lys Ser Ser Glu Ser Lys Glu Ser Gln Lys Asn
65                  70                  75                  80

Asp Lys Asp Leu Lys Ile Leu Glu Lys Glu Ile Arg Val Leu Leu Gln
                85                  90                  95

Glu Arg Gly Ala Gln Asp Ser Arg Ile Gln Asp Leu Glu Thr Glu Leu
            100                 105                 110

Glu Lys Met Glu Ala Arg Leu Asn Ala Ala Leu Arg Glu Lys Thr Ser
        115                 120                 125

Leu Ser Ala Asn Asn Ala Thr Leu Glu Lys Gln Leu Ile Glu Leu Thr
    130                 135                 140

Arg Thr Asn Glu Leu Leu Lys Ser Lys Phe Ser Glu Asn Gly Asn Gln
```

```
145                 150                 155                 160

Lys Asn Leu Arg Ile Leu Ser Leu Glu Leu Met Lys Leu Arg Asn Lys
                165                 170                 175

Arg Glu Thr Lys Met Arg Gly Met Met Ala Lys Gln Glu Gly Met Glu
            180                 185                 190

Met Lys Leu Gln Val Thr Gln Arg Ser Leu Glu Glu Ser Gln Gly Lys
        195                 200                 205

Ile Ala Gln Leu Glu Gly Lys Leu Val Ser Ile Glu Lys Glu Lys Ile
    210                 215                 220

Asp Glu Lys Ser Glu Thr Glu Lys Leu Leu Glu Tyr Ile Glu Glu Ile
225                 230                 235                 240

Ser Cys Ala Ser Asp Gln Val Glu Lys Tyr Lys Leu Asp Ile Ala Gln
                245                 250                 255

Leu Glu Glu Asn Leu Lys Glu Lys Asn Asp Glu Ile Leu Ser Leu Lys
            260                 265                 270

Gln Ser Leu Glu Glu Asn Ile Val Ile Leu Ser Lys Gln Val Glu Asp
        275                 280                 285

Leu Asn Val Lys Cys Gln Leu Leu Glu Lys Glu Lys Glu Asp His Val
    290                 295                 300

Asn Arg Asn Arg Glu His Asn Glu Asn Leu Asn Ala Glu Met Gln Asn
305                 310                 315                 320

Leu Lys Gln Lys Phe Ile Leu Glu Gln Gln Glu Arg Glu Lys Leu Gln
                325                 330                 335

Gln Lys Glu Leu Gln Ile Asp Ser Leu Leu Gln Gln Glu Lys Glu Leu
            340                 345                 350

Ser Ser Ser Leu His Gln Lys Leu Cys Ser Phe Gln Glu Glu Met Val
        355                 360                 365

Lys Glu Lys Asn Leu Phe Glu Glu Glu Leu Lys Gln Thr Leu Asp Glu
    370                 375                 380

Leu Asp Lys Leu Gln Gln Lys Glu Glu Gln Ala Glu Arg Leu Val Lys
385                 390                 395                 400

Gln Leu Glu Glu Glu Ala Lys Ser Arg Ala Glu Glu Leu Lys Leu Leu
                405                 410                 415

Glu Glu Lys Leu Lys Gly Lys Glu Ala Glu Leu Glu Lys Ser Ser Ala
            420                 425                 430

Ala His Thr Gln Ala Thr Leu Leu Leu Gln Glu Lys Tyr Asp Ser Met
        435                 440                 445

Val Gln Ser Leu Glu Asp Val Thr Ala Gln Phe Glu Ser Tyr Lys Ala
```

```
     450                 455                 460

Leu Thr Ala Ser Glu Ile Glu Asp Leu Lys Leu Glu Asn Ser Ser Leu
465                 470                 475                 480

Gln Glu Lys Ala Ala Lys Ala Gly Lys Asn Ala Glu Asp Val Gln His
                485                 490                 495

Gln Ile Leu Ala Thr Glu Ser Ser Asn Gln Glu Tyr Val Arg Met Leu
            500                 505                 510

Leu Asp Leu Gln Thr Lys Ser Ala Leu Lys Glu Thr Glu Ile Lys Glu
        515                 520                 525

Ile Thr Val Ser Phe Leu Gln Lys Ile Thr Asp Leu Gln Asn Gln Leu
    530                 535                 540

Lys Gln Gln Glu Glu Asp Phe Arg Lys Gln Leu Glu Asp Glu Glu Gly
545                 550                 555                 560

Arg Lys Ala Glu Lys Glu Asn Thr Thr Ala Glu Leu Thr Glu Glu Ile
                565                 570                 575

Asn Lys Trp Arg Leu Leu Tyr Glu Glu Leu Tyr Asn Lys Thr Lys Pro
            580                 585                 590

Phe Gln Leu Gln Leu Asp Ala Phe Glu Val Glu Lys Gln Ala Leu Leu
        595                 600                 605

Asn Glu His Gly Ala Ala Gln Glu Gln Leu Asn Lys Ile Arg Asp Ser
    610                 615                 620

Tyr Ala Lys Leu Leu Gly His Gln Asn Leu Lys Gln Lys Ile Lys His
625                 630                 635                 640

Val Val Lys Leu Lys Asp Glu Asn Ser Gln Leu Lys Ser Glu Val Ser
                645                 650                 655

Lys Leu Arg Cys Gln Leu Ala Lys Lys Lys Gln Ser Glu Thr Lys Leu
            660                 665                 670

Gln Glu Glu Leu Asn Lys Val Leu Gly Ile Lys His Phe Asp Pro Ser
        675                 680                 685

Lys Ala Phe His His Glu Ser Lys Glu Asn Phe Ala Leu Lys Thr Pro
    690                 695                 700

Leu Lys Glu Gly Asn Thr Asn Cys Tyr Arg Ala Pro Met Glu Cys Gln
705                 710                 715                 720

Glu Ser Trp Lys
```

<210> 81
<211> 713
<212> PRT

<213> Rattus norvegicus

<400> 81

```
Met Ser Phe Pro Lys Ala Pro Leu Lys Arg Phe Asn Asp Pro Ser Gly
  1               5                  10                  15

Cys Ala Pro Ser Pro Gly Ala Tyr Asp Val Lys Thr Ser Glu Ser Thr
             20                  25                  30

Lys Gly Pro Val Ser Phe Gln Lys Ser Gln Arg Phe Lys Asn Gln Arg
         35                  40                  45

Glu Ser Gln Gln Asn Leu Asn Ile Asp Lys Asp Thr Thr Leu Leu Ala
     50                  55                  60

Ser Ala Lys Lys Ala Lys Thr Leu Val Ser Lys Lys Glu Ser Gln Lys
 65                  70                  75                  80

Asn Asp Lys Asp Val Lys Arg Leu Glu Lys Glu Ile His Val Leu Leu
                 85                  90                  95

Gln Glu Arg Gly Thr Gln Asp Lys Arg Ile Gln Asp Met Glu Ser Glu
            100                 105                 110

Leu Glu Asn Thr Glu Ala Asn Leu Asn Ala Pro Val Thr Glu Lys Pro
        115                 120                 125

Ser Leu Ser Ala Asn Asn Ala Ser Leu Glu Lys Arg Leu Thr Glu Leu
    130                 135                 140

Thr Arg Ala Asn Glu Leu Leu Lys Ser Lys Phe Ser Glu Asp Ala His
145                 150                 155                 160

Gln Lys Asn Met Arg Thr Leu Ser Leu Glu Leu Met Lys Leu Arg Asn
                165                 170                 175

Lys Arg Glu Thr Lys Met Arg Ser Met Met Ala Lys Gln Glu Gly Met
            180                 185                 190

Glu Leu Lys Leu Gln Ala Thr Gln Lys Asp Leu Ile Glu Ser Lys Gly
        195                 200                 205

Lys Ile Val Gln Leu Glu Gly Lys Leu Val Ser Ile Glu Lys Glu Lys
    210                 215                 220

Ile Asp Glu Lys Ser Glu Thr Glu Lys Leu Leu Glu Tyr Ile Glu Glu
225                 230                 235                 240

Ile Ser Cys Ala Ser Asp Gln Val Glu Lys Tyr Lys Leu Asp Ile Ala
                245                 250                 255

Gln Leu Glu Glu Asp Leu Lys Glu Lys Asp Arg Glu Ile Leu Cys Leu
            260                 265                 270

Lys Gln Ser Leu Glu Glu Lys Val Ser Phe Ser Lys Gln Ile Glu Asp
        275                 280                 285
```

```
Leu Thr Val Lys Cys Gln Leu Leu Glu Ala Glu Arg Asp Asp Leu Val
    290                 295                 300

Ser Lys Asp Arg Glu Arg Ala Glu Ser Leu Ser Ala Glu Met Gln Val
305                 310                 315                 320

Leu Thr Glu Lys Leu Leu Leu Glu Arg Gln Glu Tyr Glu Lys Leu Gln
                325                 330                 335

Gln Asn Glu Leu Gln Ser Gln Ser Leu Leu Gln Gln Glu Lys Glu Leu
            340                 345                 350

Ser Ala His Leu Gln Gln Gln Leu Cys Ser Phe Gln Glu Glu Met Thr
        355                 360                 365

Ser Glu Arg Asn Val Phe Lys Glu Gln Leu Lys Leu Ala Leu Asp Glu
    370                 375                 380

Leu Asp Ala Val Gln Gln Lys Lys Glu Gln Ser Glu Lys Leu Val Lys
385                 390                 395                 400

Gln Leu Glu Glu Glu Thr Lys Ser Thr Ala Glu Gln Leu Arg Arg Leu
                405                 410                 415

Asp Asp Leu Leu Arg Glu Lys Glu Ile Glu Leu Glu Lys Arg Thr Ala
            420                 425                 430

Ala His Ala Gln Ala Thr Val Ile Ala Gln Glu Lys Tyr Ser Asp Thr
        435                 440                 445

Ala Gln Thr Leu Arg Asp Val Thr Ala Gln Leu Glu Ser Tyr Lys Ser
    450                 455                 460

Ser Thr Leu Lys Glu Ile Glu Asp Leu Lys Leu Glu Asn Leu Thr Leu
465                 470                 475                 480

Gln Glu Lys Val Ala Met Ala Glu Lys Arg Val Glu Asp Val Gln Gln
                485                 490                 495

Gln Ile Leu Thr Ala Glu Ser Thr Asn Gln Glu Tyr Ala Lys Val Val
            500                 505                 510

Gln Asp Leu Gln Asn Ser Ser Thr Leu Lys Glu Ala Glu Ile Lys Glu
        515                 520                 525

Ile Thr Ser Ser Tyr Leu Glu Lys Ile Thr Asp Leu Gln Asn Gln Leu
    530                 535                 540

Arg Gln Gln Asn Glu Asp Phe Arg Lys Gln Leu Glu Glu Glu Gly Ala
545                 550                 555                 560

Lys Met Thr Glu Lys Glu Thr Ala Val Thr Glu Leu Thr Met Glu Ile
                565                 570                 575

Asn Lys Trp Arg Leu Leu Tyr Glu Glu Leu Phe Asp Lys Thr Lys Pro
            580                 585                 590
```

```
Phe Gln Gln Gln Leu Asp Ala Phe Glu Ala Glu Lys Gln Ala Leu Leu
        595                 600                 605

Asn Glu His Gly Ala Thr Gln Glu Gln Leu Ser Lys Ile Arg Asp Ser
    610                 615                 620

Tyr Ala Gln Leu Leu Gly His Gln Asn Leu Lys Gln Lys Ile Lys His
625                 630                 635                 640

Val Val Lys Leu Lys Asp Glu Asn Ser Gln Leu Lys Ser Glu Val Ser
                645                 650                 655

Lys Leu Arg Ser Gln Leu Ala Lys Arg Lys Gln Asn Glu Leu Arg Leu
            660                 665                 670

Gln Gly Glu Leu Asp Lys Ala Leu Gly Ile Arg His Phe Asp Pro Ser
        675                 680                 685

Lys Ala Phe Cys His Glu Ser Lys Glu Asn Val Thr Leu Lys Thr Pro
    690                 695                 700

Leu Lys Glu Gly Asn Pro Asn Cys Cys
705                 710
```

<210> 82
<211> 405
<212> PRT
<213> Homo sapiens

<400> 82

```
Met Asp Ser Leu Val Thr Ala Asn Thr Lys Phe Cys Phe Asp Leu Phe
  1               5                  10                  15

Gln Glu Ile Gly Lys Asp Asp Arg His Lys Asn Ile Phe Phe Ser Pro
             20                  25                  30

Leu Ser Leu Ser Ala Ala Leu Gly Met Val Arg Leu Gly Ala Arg Ser
         35                  40                  45

Asp Ser Ala His Gln Ile Asp Glu Val Leu His Phe Asn Glu Phe Ser
     50                  55                  60

Gln Asn Glu Ser Lys Glu Pro Asp Pro Cys Leu Lys Ser Asn Lys Gln
 65                  70                  75                  80

Lys Ala Gly Ser Leu Asn Asn Glu Ser Gly Leu Val Ser Cys Tyr Phe
                85                  90                  95

Gly Gln Leu Leu Ser Lys Leu Asp Arg Ile Lys Thr Asp Tyr Thr Leu
            100                 105                 110

Ser Ile Ala Asn Arg Leu Tyr Gly Glu Gln Glu Phe Pro Ile Cys Gln
        115                 120                 125

Glu Tyr Leu Asp Gly Val Ile Gln Phe Tyr His Thr Thr Ile Glu Ser
    130                 135                 140
```

```
Val Asp Phe Gln Lys Asn Pro Glu Lys Ser Arg Gln Glu Ile Asn Phe
145                 150                 155                 160

Trp Val Glu Cys Gln Ser Gln Gly Lys Ile Lys Glu Leu Phe Ser Lys
                165                 170                 175

Asp Ala Ile Asn Ala Glu Thr Val Leu Val Leu Val Asn Ala Val Tyr
            180                 185                 190

Phe Lys Ala Lys Trp Glu Thr Tyr Phe Asp His Glu Asn Thr Val Asp
        195                 200                 205

Ala Pro Phe Cys Leu Asn Ala Asn Glu Asn Lys Ser Val Lys Met Met
    210                 215                 220

Thr Gln Lys Gly Leu Tyr Arg Ile Gly Phe Ile Glu Glu Val Lys Ala
225                 230                 235                 240

Gln Ile Leu Glu Met Arg Tyr Thr Lys Gly Lys Leu Ser Met Phe Val
                245                 250                 255

Leu Leu Pro Ser His Ser Lys Asp Asn Leu Lys Gly Leu Glu Glu Leu
            260                 265                 270

Glu Arg Lys Ile Thr Tyr Glu Lys Met Val Ala Trp Ser Ser Ser Glu
        275                 280                 285

Asn Met Ser Glu Glu Ser Val Val Leu Ser Phe Pro Arg Phe Thr Leu
    290                 295                 300

Glu Asp Ser Tyr Asp Leu Asn Ser Ile Leu Gln Asp Met Gly Ile Thr
305                 310                 315                 320

Asp Ile Phe Asp Glu Thr Arg Ala Asp Leu Thr Gly Ile Ser Pro Ser
                325                 330                 335

Pro Asn Leu Tyr Leu Ser Lys Ile Ile His Lys Thr Phe Val Glu Val
            340                 345                 350

Asp Glu Asn Gly Thr Gln Ala Ala Ala Ala Thr Gly Ala Val Val Ser
        355                 360                 365

Glu Arg Ser Leu Arg Ser Trp Val Glu Phe Asn Ala Asn His Pro Phe
    370                 375                 380

Leu Phe Phe Ile Arg His Asn Lys Thr Gln Thr Ile Leu Phe Tyr Gly
385                 390                 395                 400

Arg Val Cys Ser Pro
                405
```

<210> 83
<211> 423
<212> PRT
<213> Mus musculus

<400> 83

```
Met Asp Ser Leu Thr Ala Ala Asn Asn Lys Phe Cys Phe Asp Phe Phe
  1               5                  10                  15

Arg Glu Ile Ser Lys Asp Asp Ala His Lys Asn Ile Phe Val Cys Pro
             20                  25                  30

Leu Ser Leu Ser Ala Ala Phe Gly Met Val Arg Leu Gly Ala Arg Gly
         35                  40                  45

Asp Ser Ala His Gln Ile Asp Glu Ala Leu His Phe Asn Glu Leu Ser
     50                  55                  60

Lys Asp Glu His Lys Glu Pro Asn Asp Pro Ser Pro Gln Ser Glu Ser
 65                  70                  75                  80

Lys Ala Ser Asp Ser Ser Leu Glu Gly Gln Lys Gln Thr Ser Ala Ser
                 85                  90                  95

Gln Asp Gln Gln Gly Glu Ser Thr Asn Asp His Gln Leu Leu Gly Cys
            100                 105                 110

His Phe Gly Lys Leu Leu Ser Arg Ile Asp Arg Asp Lys Ser Tyr Tyr
        115                 120                 125

Thr Leu Ser Met Ala Asn Arg Leu Tyr Gly Glu Gln Glu Phe Pro Ile
    130                 135                 140

Cys Ser Glu Tyr Ser Asp Asp Val Thr Glu Phe Phe His Thr Thr Val
145                 150                 155                 160

Glu Ser Val Asp Phe Gln Lys Asp Ser Glu Lys Ser Arg Gln Glu Ile
                165                 170                 175

Asn Phe Trp Val Glu Ser Gln Ser Gln Gly Lys Ile Lys Glu Leu Phe
            180                 185                 190

Gly Lys Glu Ala Ile Asp Asn Ser Thr Val Leu Val Leu Val Asn Ala
        195                 200                 205

Val Tyr Phe Lys Ala Lys Trp Glu Arg Glu Phe Asn Ser Glu Asn Thr
    210                 215                 220

Val Asp Ala Ser Phe Cys Leu Asn Glu Asn Glu Lys Lys Thr Val Lys
225                 230                 235                 240

Met Met Asn Gln Lys Gly Lys Phe Arg Ile Gly Phe Ile Asp Glu Leu
                245                 250                 255

Gln Ala Gln Ile Leu Glu Met Lys Tyr Ala Met Gly Lys Leu Ser Met
            260                 265                 270

Leu Val Leu Leu Pro Ser Cys Ser Glu Asp Asn Val Asn Ser Leu Gln
        275                 280                 285

Glu Leu Glu Lys Lys Ile Asn His Glu Lys Leu Leu Ala Trp Ser Ser
```

```
    290                 295                 300

Ser Glu Asn Leu Ser Glu Lys Pro Val Ala Ile Ser Phe Pro Gln Phe
305                 310                 315                 320

Asn Leu Glu Asp Ser Tyr Asp Leu Lys Ser Ile Leu Gln Asp Met Gly
                325                 330                 335

Ile Lys Asp Val Phe Asp Glu Thr Lys Ala Asp Leu Thr Gly Ile Ser
            340                 345                 350

Lys Ser Pro Asn Leu Tyr Leu Ser Lys Ile Val His Lys Thr Phe Val
        355                 360                 365

Glu Val Asp Glu Met Gly Thr Gln Ala Ala Ala Ala Ser Gly Val Val
    370                 375                 380

Ala Ala Glu Lys Ala Leu Pro Ser Trp Val Glu Phe Asn Ala Asn His
385                 390                 395                 400

Pro Phe Leu Phe Phe Ile Arg His Asn Pro Thr Gln Ser Leu Leu Phe
                405                 410                 415

Cys Gly Arg Val Tyr Cys Pro
            420
```

<210> 84
<211> 378
<212> PRT
<213> Bos taurus

<400> 84

```
Met Asp Ala Leu Ser Glu Ala Asn Gly Thr Phe Ala Leu Thr Leu Leu
  1               5                  10                  15

Lys Lys Leu Gly Glu Gly Asn Ser Lys Asn Val Phe Ile Ser Pro Leu
             20                  25                  30

Ser Ile Ser Ser Ala Leu Ala Met Val Leu Leu Gly Ala Lys Gly Asn
         35                  40                  45

Thr Ala Ala Gln Met Cys Gln Thr Leu Ser Leu Asn Lys Ser Ser Gly
     50                  55                  60

Gly Gly Glu Asp Val His Gln Gly Phe Gln Asn Leu Leu Ser Glu Val
 65                  70                  75                  80

Asn Arg Arg Asp Thr Gln Tyr Leu Leu Arg Thr Ala Asn Arg Leu Phe
                 85                  90                  95

Gly Glu Lys Thr Tyr Asp Phe Leu Ser Ser Phe Lys Asp Ser Cys His
            100                 105                 110

Lys Phe Tyr Gln Ala Glu Met Glu Glu Leu Asp Phe Val Ser Ala Thr
        115                 120                 125
```

```
Glu Gln Ser Arg Lys His Ile Asn Thr Trp Val Ala Glu Lys Thr Glu
    130                 135                 140

Gly Lys Ile Arg Asp Leu Leu Pro Ala Asn Ser Val Asn Pro Met Thr
145                 150                 155                 160

Arg Leu Val Leu Val Asn Ala Ile Tyr Phe Lys Gly Asn Trp Asp Thr
                165                 170                 175

Gln Phe Asn Lys Glu His Thr Glu Glu Arg Pro Phe Arg Val Ser Lys
            180                 185                 190

Asn Val Glu Lys Pro Val Gln Met Met Phe Lys Lys Ser Thr Cys Lys
        195                 200                 205

Ile Thr Tyr Ile Gly Glu Ile Ser Thr Gln Ile Leu Val Leu Pro Tyr
    210                 215                 220

Val Gly Gln Glu Leu Asn Met Val Ile Leu Leu Pro Ser Glu Ser Thr
225                 230                 235                 240

Asp Leu Asn Thr Val Glu Lys Ala Leu Thr Tyr Glu Lys Phe Ile Ala
                245                 250                 255

Trp Thr Lys Pro Asp Val Met Asp Glu Glu Glu Val Glu Val Phe Leu
            260                 265                 270

Pro Arg Phe Thr Leu Glu Glu Ser Tyr Asp Met Glu Glu Phe Leu Gln
        275                 280                 285

Glu Leu Gly Met Thr Asp Ala Phe Glu Glu Thr Arg Ala Asp Phe Ser
    290                 295                 300

Gly Met Ser Ser Gly Arg Gly Leu His Leu Ser Lys Val Met His Lys
305                 310                 315                 320

Ser Phe Val Glu Val Thr Glu Glu Gly Thr Glu Ala Ala Ala Ala Thr
                325                 330                 335

Gly Ala Val Val Met Met Arg Cys Leu Met Val Val Pro Arg Phe Asn
            340                 345                 350

Ala Asn His Pro Phe Leu Phe Phe Ile Gln His Ser Lys Thr Gly Ala
        355                 360                 365

Ile Leu Phe Cys Gly Arg Phe Cys Ser Pro
    370                 375


<210> 85
<211> 379
<212> PRT
<213> Mus musculus

<400> 85
Met Glu Gln Leu Ser Ser Ala Asn Thr Leu Phe Ala Leu Glu Leu Phe
  1               5                  10                  15
```

```
Gln Thr Leu Asn Glu Ser Ser Pro Thr Gly Asn Ile Phe Phe Ser Pro
            20                  25                  30

Phe Ser Ile Ser Ser Ala Leu Ala Met Val Ile Leu Gly Ala Lys Gly
        35                  40                  45

Ser Thr Ala Ala Gln Leu Ser Lys Thr Phe His Phe Asp Ser Val Glu
    50                  55                  60

Asp Ile His Ser Arg Phe Gln Ser Leu Asn Ala Glu Val Ser Lys Arg
65                  70                  75                  80

Gly Ala Ser His Thr Leu Lys Leu Ala Asn Arg Leu Tyr Gly Glu Lys
                85                  90                  95

Thr Tyr Asn Phe Leu Pro Glu Tyr Leu Ala Ser Thr Gln Lys Met Tyr
            100                 105                 110

Gly Ala Asp Leu Ala Pro Val Asp Phe Leu His Ala Ser Glu Asp Ala
        115                 120                 125

Arg Lys Glu Ile Asn Gln Trp Val Lys Gly Gln Thr Glu Gly Lys Ile
    130                 135                 140

Pro Glu Leu Leu Ser Val Gly Val Val Asp Ser Met Thr Lys Leu Val
145                 150                 155                 160

Leu Val Asn Ala Ile Tyr Phe Lys Gly Met Trp Glu Glu Lys Phe Met
                165                 170                 175

Thr Glu Asp Thr Thr Asp Ala Pro Phe Arg Leu Ser Lys Lys Asp Thr
            180                 185                 190

Lys Thr Val Lys Met Met Tyr Gln Lys Lys Lys Phe Pro Phe Gly Tyr
        195                 200                 205

Ile Ser Asp Leu Lys Cys Lys Val Leu Glu Met Pro Tyr Gln Gly Gly
    210                 215                 220

Glu Leu Ser Met Val Ile Leu Leu Pro Lys Asp Ile Glu Asp Glu Ser
225                 230                 235                 240

Thr Gly Leu Lys Lys Ile Glu Lys Gln Ile Thr Leu Glu Lys Leu Leu
                245                 250                 255

Glu Trp Thr Lys Arg Glu Asn Leu Glu Phe Ile Asp Val His Val Lys
            260                 265                 270

Leu Pro Arg Phe Lys Ile Glu Glu Ser Tyr Thr Leu Asn Ser Asn Leu
        275                 280                 285

Gly Arg Leu Gly Val Gln Asp Leu Phe Ser Ser Ser Lys Ala Asp Leu
    290                 295                 300

Ser Gly Met Ser Gly Ser Arg Asp Leu Phe Ile Ser Lys Ile Val His
305                 310                 315                 320
```

```
Lys Ser Phe Val Glu Val Asn Glu Glu Gly Thr Glu Ala Ala Ala Ala
                325                 330                 335

Thr Gly Gly Ile Ala Thr Phe Cys Met Leu Leu Pro Glu Glu Glu Phe
            340                 345                 350

Thr Val Asp His Pro Phe Ile Phe Phe Ile Arg His Asn Pro Thr Ser
        355                 360                 365

Asn Val Leu Phe Leu Gly Arg Val Cys Ser Pro
    370                 375


<210> 86
<211> 379
<212> PRT
<213> Mus musculus

<220>
<221> VARIANT
<222> (204)
<223> Wherein Xaa is any amino acid as defined in the
      specification.

<400> 86
Met Glu Gln Leu Ser Ser Ala Asn Thr Leu Phe Ala Leu Glu Leu Phe
  1               5                  10                  15

Gln Thr Leu Asn Glu Ser Ser Pro Thr Gly Asn Ile Phe Phe Ser Pro
             20                  25                  30

Phe Ser Ile Ser Ser Ala Leu Ala Met Val Ile Leu Gly Ala Lys Gly
         35                  40                  45

Ser Thr Ala Ala Gln Leu Ser Lys Thr Phe His Phe Asp Ser Val Glu
     50                  55                  60

Asp Ile His Ser Arg Phe Gln Ser Gln Asn Ala Glu Val Ser Lys Arg
 65                  70                  75                  80

Gly Ala Ser His Thr Leu Lys Leu Ala Asn Arg Leu Tyr Gly Glu Lys
                 85                  90                  95

Thr Tyr Asn Phe Leu Pro Glu Tyr Leu Ala Ser Thr Gln Lys Met Tyr
            100                 105                 110

Gly Ala Asp Leu Ala Pro Val Asp Phe Leu His Ala Ser Glu Asp Ala
        115                 120                 125

Arg Lys Glu Ile Asn Gln Trp Val Lys Gly Gln Thr Glu Gly Lys Ile
    130                 135                 140

Pro Glu Leu Leu Ser Val Gly Val Val Asp Ser Met Thr Lys Leu Val
145                 150                 155                 160

Leu Val Asn Ala Ile Tyr Phe Lys Gly Met Trp Glu Glu Lys Phe Met
```

```
                165                 170                 175

Thr Glu Asp Thr Thr Asp Ala Pro Phe Arg Leu Ser Lys Lys Asp Thr
            180                 185                 190

Arg Thr Val Lys Met Met Tyr Gln Lys Lys Lys Xaa Pro Phe Gly Tyr
        195                 200                 205

Ile Ser Asp Leu Lys Cys Lys Val Leu Glu Met Pro Tyr Gln Gly Gly
    210                 215                 220

Glu Leu Ser Met Val Ile Leu Leu Pro Lys Asp Ile Glu Asp Glu Ser
225                 230                 235                 240

Thr Gly Leu Lys Lys Ile Glu Lys Gln Ile Thr Leu Glu Lys Leu Leu
                245                 250                 255

Glu Trp Thr Lys Arg Glu Asn Leu Glu Phe Ile Asp Val His Val Lys
            260                 265                 270

Leu Pro Arg Phe Lys Ile Glu Glu Ser Tyr Thr Leu Asn Ser Asn Leu
        275                 280                 285

Gly Arg Leu Gly Val Gln Asp Leu Phe Ser Ser Ser Lys Ala Asp Leu
    290                 295                 300

Ser Gly Met Ser Gly Ser Arg Asp Leu Phe Ile Ser Lys Ile Val His
305                 310                 315                 320

Lys Ser Phe Val Glu Val Asn Glu Glu Gly Thr Glu Ala Ala Ala Ala
                325                 330                 335

Thr Gly Gly Ile Ala Thr Phe Cys Met Leu Leu Pro Glu Glu Glu Phe
            340                 345                 350

Thr Val Asp His Pro Phe Ile Phe Phe Ile Arg His Asn Pro Thr Ser
        355                 360                 365

Asn Val Leu Phe Leu Gly Arg Val Cys Ser Pro
    370                 375


<210> 87
<211> 371
<212> PRT
<213> Homo sapiens

<400> 87
Lys Leu Ala Ser Ala Asn Ala Asp Phe Ala Phe Ser Leu Tyr Lys Glu
  1               5                  10                  15

Leu Val Glu Gln Asn Pro Asp Lys Asn Ile Phe Phe Ser Pro Val Ser
            20                  25                  30

Ile Ser Ser Ala Leu Ala Met Leu Ser Leu Gly Ala Lys Gly Asn Thr
        35                  40                  45
```

```
Ala Thr Gln Ile Leu Glu Val Leu Gly Phe Asn Leu Thr Glu Thr Ser
     50                  55                  60

Glu Ala Glu Ile His Gln Gly Phe Gln His Leu Leu Gln Glu Leu Asn
 65                  70                  75                  80

Arg Pro Asp Thr Gly Leu Gln Leu Thr Thr Gly Asn Ala Leu Phe Val
                 85                  90                  95

Asp Lys Ser Leu Lys Leu Leu Asp Glu Phe Leu Glu Asp Ser Lys Arg
            100                 105                 110

Leu Tyr Gln Ser Glu Val Phe Ser Val Asp Phe Ser Asp Pro Glu Glu
        115                 120                 125

Ala Lys Lys Gln Ile Asn Asp Trp Val Glu Lys Lys Thr Gln Gly Lys
    130                 135                 140

Ile Lys Asp Leu Leu Lys Asp Leu Asp Ser Asp Thr Val Leu Val Leu
145                 150                 155                 160

Val Asn Tyr Ile Tyr Phe Lys Gly Lys Trp Lys Lys Pro Phe Asp Pro
                165                 170                 175

Glu Leu Thr Glu Glu Glu Asp Phe His Val Asp Lys Lys Thr Thr Val
            180                 185                 190

Lys Val Pro Met Met Asn Gln Leu Gly Thr Phe Tyr Tyr Phe Arg Asp
        195                 200                 205

Glu Glu Leu Asn Cys Lys Val Leu Glu Leu Pro Tyr Lys Gly Asn Ala
    210                 215                 220

Thr Ser Met Leu Phe Ile Leu Pro Asp Glu Val Gly Lys Leu Glu Gln
225                 230                 235                 240

Val Glu Ala Ala Leu Ser Pro Glu Thr Leu Arg Lys Trp Leu Glu Asn
                245                 250                 255

Met Glu Pro Arg Glu Val Glu Leu Tyr Leu Pro Lys Phe Ser Ile Glu
            260                 265                 270

Gly Thr Tyr Asp Leu Lys Asp Val Leu Ala Lys Leu Gly Ile Thr Asp
        275                 280                 285

Leu Phe Ser Asn Gln Ala Asp Leu Ser Gly Ile Ser Glu Asp Glu Asp
    290                 295                 300

Leu Lys Val Ser Lys Ala Val His Lys Ala Val Leu Glu Val Asp Glu
305                 310                 315                 320

Glu Gly Thr Glu Ala Ala Ala Ala Thr Gly Ala Ile Ile Val Pro Arg
                325                 330                 335

Ser Leu Pro Pro Glu Leu Glu Phe Thr Ala Asp Arg Pro Phe Leu Phe
            340                 345                 350
```

```
Leu Ile Tyr Asp Asp Pro Thr Gly Ser Ile Leu Phe Met Gly Lys Val
        355                 360                 365

Val Asn Pro
    370
```

<210> 88
<211> 360
<212> PRT
<213> Homo sapiens

<400> 88

```
Phe Asp Leu Tyr Lys Glu Leu Ala Lys Glu Ser Pro Asp Lys Asn Ile
  1               5                  10                  15

Phe Phe Ser Pro Val Ser Ile Ser Ser Ala Leu Ala Met Leu Ser Leu
             20                  25                  30

Gly Ala Lys Gly Ser Thr Ala Thr Gln Ile Leu Glu Val Leu Gly Phe
         35                  40                  45

Asn Leu Thr Glu Thr Ser Glu Ala Asp Ile His Gln Gly Phe Gln His
     50                  55                  60

Leu Leu His Leu Leu Asn Arg Pro Asp Asn Lys Leu Gln Leu Lys Thr
 65                  70                  75                  80

Ala Asn Ala Leu Phe Val Asp Lys Ser Leu Lys Leu Leu Asp Ser Phe
                 85                  90                  95

Leu Glu Asp Val Lys Lys Leu Tyr Gly Ala Glu Val Gln Ser Val Asp
            100                 105                 110

Phe Ser Asp Pro Ala Glu Glu Ala Lys Lys Gln Ile Asn Asp Trp Val
        115                 120                 125

Lys Lys Lys Thr Gln Gly Lys Ile Lys Asp Leu Leu Ser Asp Leu Asp
    130                 135                 140

Pro Asp Thr Arg Leu Val Leu Val Asn Ala Ile Tyr Phe Lys Gly Lys
145                 150                 155                 160

Trp Lys Thr Pro Phe Asp Pro Glu Asn Thr Arg Glu Glu Asp Phe Tyr
                165                 170                 175

Val Asp Glu Thr Thr Thr Val Lys Val Pro Met Met Ser Gln Thr Gly
            180                 185                 190

Arg Thr Phe Arg Tyr Gly Arg Asp Glu Glu Leu Asn Cys Gln Val Leu
        195                 200                 205

Glu Leu Pro Tyr Lys Gly Asn Ala Ser Met Leu Ile Ile Leu Pro Asp
    210                 215                 220

Glu Gly Gly Leu Glu Thr Val Glu Lys Ala Leu Thr Pro Glu Thr Leu
225                 230                 235                 240
```

```
Lys Lys Trp Thr Lys Ser Leu Thr Lys Arg Ser Val Glu Leu Tyr Leu
                245                 250                 255

Pro Lys Phe Lys Leu Glu Ile Ser Tyr Asp Leu Lys Asp Val Leu Glu
            260                 265                 270

Lys Leu Gly Ile Thr Asp Leu Phe Ser Asn Lys Ala Asp Leu Ser Gly
        275                 280                 285

Ile Ser Glu Asp Lys Asp Leu Lys Val Ser Lys Val Val His Lys Ala
    290                 295                 300

Phe Leu Glu Val Asn Glu Glu Gly Thr Glu Ala Ala Ala Ala Thr Gly
305                 310                 315                 320

Val Ile Ile Val Pro Arg Ser Leu Pro Pro Pro Glu Phe Lys Ala Asn
                325                 330                 335

Arg Pro Phe Leu Phe Leu Ile Arg Asp Asn Pro Thr Gly Ser Ile Leu
            340                 345                 350

Phe Met Gly Lys Val Val Asn Pro
        355                 360


<210> 89
<211> 467
<212> PRT
<213> Homo sapiens

<400> 89
Met Arg Thr Ala Pro Ser Leu Arg Arg Cys Val Cys Leu Leu Leu Ala
  1               5                  10                  15

Ala Ile Leu Asp Leu Ala Arg Gly Tyr Leu Thr Val Asn Ile Glu Pro
             20                  25                  30

Leu Pro Pro Val Val Ala Gly Asp Ala Val Thr Leu Lys Cys Asn Phe
         35                  40                  45

Lys Thr Asp Gly Arg Met Arg Glu Ile Val Trp Tyr Arg Val Thr Asp
     50                  55                  60

Gly Gly Thr Ile Lys Gln Lys Ile Phe Thr Phe Asp Ala Met Phe Ser
 65                  70                  75                  80

Thr Asn Tyr Ser His Met Glu Asn Tyr Arg Lys Arg Glu Asp Leu Val
                85                  90                  95

Tyr Gln Ser Thr Val Arg Leu Pro Glu Val Arg Ile Ser Asp Asn Gly
            100                 105                 110

Pro Tyr Glu Cys His Val Gly Ile Tyr Asp Arg Ala Thr Arg Glu Lys
        115                 120                 125

Val Val Leu Ala Ser Gly Asn Ile Phe Leu Asn Val Met Ala Pro Pro
```

```
    130                 135                 140

Thr Ser Ile Glu Val Val Ala Ala Asp Thr Pro Ala Pro Phe Ser Arg
145                 150                 155                 160

Tyr Gln Ala Gln Asn Phe Thr Leu Val Cys Ile Val Ser Gly Gly Lys
                165                 170                 175

Pro Ala Pro Met Val Tyr Phe Lys Arg Asp Gly Glu Pro Ile Asp Ala
            180                 185                 190

Val Pro Leu Ser Glu Pro Pro Ala Ala Ser Ser Gly Pro Leu Gln Asp
        195                 200                 205

Ser Arg Pro Phe Arg Ser Leu Leu His Arg Asp Leu Asp Asp Thr Lys
    210                 215                 220

Met Gln Lys Ser Leu Ser Leu Leu Asp Ala Glu Asn Arg Gly Gly Arg
225                 230                 235                 240

Pro Tyr Thr Glu Arg Pro Ser Arg Gly Leu Thr Pro Asp Pro Asn Ile
                245                 250                 255

Leu Leu Gln Pro Thr Thr Glu Asn Ile Pro Glu Thr Val Val Ser Arg
            260                 265                 270

Glu Phe Pro Arg Trp Val His Ser Ala Glu Pro Thr Tyr Phe Leu Arg
        275                 280                 285

His Ser Arg Thr Pro Ser Ser Asp Gly Thr Val Glu Val Arg Ala Leu
    290                 295                 300

Leu Thr Trp Thr Leu Asn Pro Gln Ile Asp Asn Glu Ala Leu Phe Ser
305                 310                 315                 320

Cys Glu Val Lys His Pro Ala Leu Ser Met Pro Met Gln Ala Glu Val
                325                 330                 335

Thr Leu Val Ala Pro Lys Gly Pro Lys Ile Val Met Thr Pro Ser Arg
            340                 345                 350

Ala Arg Val Gly Asp Thr Val Arg Ile Leu Val His Gly Phe Gln Asn
        355                 360                 365

Glu Val Phe Pro Glu Pro Met Phe Thr Trp Thr Arg Val Gly Ser Arg
    370                 375                 380

Leu Leu Asp Gly Ser Ala Glu Phe Asp Gly Lys Glu Leu Val Leu Glu
385                 390                 395                 400

Arg Val Pro Ala Glu Leu Asn Gly Ser Met Tyr Arg Cys Thr Ala Gln
                405                 410                 415

Asn Pro Leu Gly Ser Thr Asp Thr His Thr Arg Leu Ile Val Phe Glu
            420                 425                 430

Asn Pro Asn Ile Pro Arg Gly Thr Glu Asp Ser Asn Gly Ser Ile Gly
```

```
        435                 440                 445

Pro Thr Gly Ala Arg Leu Thr Leu Val Leu Ala Leu Thr Val Ile Leu
    450                 455                 460

Glu Leu Thr
465
```

<210> 90
<211> 404
<212> PRT
<213> Macaca fascicularis

<400> 90

```
Met Arg Ala Ala Pro Ser Leu Arg Arg Cys Val Cys Leu Leu Leu Ala
  1               5                  10                  15

Ala Ile Leu Asp Leu Ala Cys Gly Tyr Leu Thr Val Asn Ile Glu Pro
             20                  25                  30

Leu Pro Pro Val Val Ala Gly Asp Ala Val Thr Leu Lys Cys Asn Phe
         35                  40                  45

Lys Thr Asp Gly Arg Met Arg Glu Ile Val Trp Tyr Arg Val Thr Asp
     50                  55                  60

Gly Gly Thr Ile Lys Gln Lys Ile Phe Thr Phe Asp Ala Met Phe Ser
 65                  70                  75                  80

Thr Asn Tyr Ser His Met Glu Asn Tyr Arg Lys Arg Glu Asp Leu Val
                 85                  90                  95

Tyr Gln Ser Thr Val Arg Leu Pro Glu Val Arg Ile Ser Asp Asn Gly
            100                 105                 110

Pro Tyr Glu Cys His Val Gly Ile Tyr Asp Arg Ala Thr Arg Glu Lys
        115                 120                 125

Val Val Leu Ala Ser Gly Asn Ile Phe Leu Asn Val Met Ala Pro Pro
    130                 135                 140

Thr Ser Ile Glu Val Val Ala Ala Asp Thr Pro Ala Pro Phe Ser Arg
145                 150                 155                 160

Tyr Gln Ala Gln Asn Phe Thr Leu Val Cys Ile Val Ser Gly Gly Lys
                165                 170                 175

Pro Ala Pro Met Val Tyr Phe Lys Arg Asp Gly Glu Pro Ile Asp Ala
            180                 185                 190

Val Pro Leu Ser Glu Pro Pro Ala Ala Ser Ser Gly Pro Leu Gln Asp
        195                 200                 205

Ser Arg Pro Phe Arg Ser Leu Leu His Arg Asp Leu Asp Asp Thr Lys
    210                 215                 220
```

```
Met Gln Lys Ser Leu Ser Leu Leu Asp Ala Glu Asn Arg Gly Gly Arg
225                 230                 235                 240

Pro Tyr Thr Glu Arg Pro Ser His Gly Leu Thr Pro Asp Pro Asn Ile
                245                 250                 255

Leu Leu Gln Pro Thr Thr Glu Asn Ile Pro Glu Thr Val Val Ser Arg
            260                 265                 270

Glu Phe Pro Arg Trp Val His Ser Ala Glu Pro Thr Tyr Phe Leu Arg
        275                 280                 285

His Ser Arg Thr Pro Ser Ser Asp Gly Thr Val Glu Val Arg Ala Leu
    290                 295                 300

Leu Thr Trp Thr Leu Asn Pro Gln Ile Asp Asn Glu Ala Leu Phe Ser
305                 310                 315                 320

Cys Glu Val Lys His Pro Ala Leu Ser Met Pro Met Gln Ala Glu Val
                325                 330                 335

Thr Leu Val Ala Pro Lys Gly Pro Lys Ile Val Met Thr Pro Ser Arg
            340                 345                 350

Ala Arg Val Gly Asp Thr Val Arg Ile Leu Val His Gly Phe Gln Asn
        355                 360                 365

Glu Val Phe Pro Glu Pro Met Phe Thr Trp Thr Arg Val Gly Ser Arg
    370                 375                 380

Leu Leu Asp Gly Ser Ala Glu Phe Asp Gly Lys Glu Leu Val Leu Glu
385                 390                 395                 400

Arg Val Pro Ala
```

<210> 91
<211> 80
<212> PRT
<213> Homo sapiens

<400> 91

```
Val Thr Asp Gly Gly Thr Ile Lys Gln Lys Ile Phe Thr Phe Asp Ala
  1               5                  10                  15

Met Phe Ser Thr Asn Tyr Ser His Met Glu Asn Tyr Arg Lys Arg Glu
            20                  25                  30

Asp Leu Val Tyr Gln Ser Thr Val Arg Leu Pro Glu Val Arg Ile Ser
        35                  40                  45

Asp Asn Gly Pro Tyr Glu Cys His Val Gly Ile Tyr Asp Arg Ala Thr
    50                  55                  60

Arg Glu Lys Val Val Leu Ala Ser Gly Asn Ile Phe Leu Asn Val Met
65                  70                  75                  80
```

<210> 92
<211> 4162
<212> PRT
<213> Gallus gallus

<400> 92

```
Met Thr Thr Lys Ala Pro Thr Phe Thr Gln Pro Leu Gln Ser Val Val
  1               5                  10                  15

Ala Leu Glu Gly Ser Ala Ala Thr Phe Glu Ala His Ile Ser Gly Phe
             20                  25                  30

Pro Val Pro Glu Val Ser Trp Tyr Arg Asp Gly Gln Val Leu Ser Ala
         35                  40                  45

Ala Thr Leu Pro Gly Val Gln Ile Ser Phe Ser Asp Gly Arg Ala Lys
     50                  55                  60

Leu Val Ile Pro Ser Val Thr Glu Ala Asn Ser Gly Arg Tyr Thr Ile
 65                  70                  75                  80

Gln Ala Thr Asn Gly Ser Gly Gln Ala Thr Ser Thr Ala Glu Leu Leu
                 85                  90                  95

Val Thr Ala Gly Thr Ala Pro Pro Asn Phe Ser Gln Arg Leu Gln Ser
            100                 105                 110

Met Thr Ala Arg Gln Gly Ser Gln Val Arg Leu Asp Val Arg Val Thr
        115                 120                 125

Gly Ile Pro Thr Pro Val Val Lys Phe Tyr Arg Asp Gly Val Glu Ile
    130                 135                 140

Gln Ser Ser Pro Asp Phe Gln Ile Leu Gln Glu Gly Asp Leu Tyr Ser
145                 150                 155                 160

Leu Ile Ile Ala Glu Ala Tyr Pro Glu Asp Ser Gly Thr Tyr Ser Val
                165                 170                 175

Asn Ala Thr Asn Asn Val Gly Arg Ala Thr Ser Thr Ala Glu Leu Leu
            180                 185                 190

Ile Gln Gly Glu Glu Glu Ala Val Pro Ala Lys Lys Thr Lys Thr Ile
        195                 200                 205

Val Ser Thr Ala Gln Ile Ser Gln Thr Arg Gln Ala Arg Ile Glu Lys
    210                 215                 220

Lys Ile Glu Thr His Phe Asp Ala Arg Ser Leu Thr Ser Val Glu Met
225                 230                 235                 240

Val Ile Glu Gly Ala Ala Ala Gln Gln Leu Pro His Lys Ala Pro Pro
```

245 250 255

Arg Met Pro Pro Arg Pro Thr Ser Lys Ser Pro Thr Pro Pro Val Ile
260 265 270

Thr Ala Lys Ala Gln Met Ala Arg Gln Gln Ser Pro Ser Pro Val Arg
275 280 285

Gln Ser Pro Ser Pro Val Arg His Val Arg Ala Pro Thr Pro Ser Pro
290 295 300

Val Arg Ser Val Ser Pro Ala Gly Arg Ile Ser Thr Ser Pro Ile Arg
305 310 315 320

Pro Val Lys Ser Pro Ser Pro Ile Arg Lys Ala Gln Val Val Thr Pro
325 330 335

Gly Ala Glu Val Leu Pro Pro Trp Arg Gln Glu Gly Tyr Ser Ala Thr
340 345 350

Ala Glu Ala Gln Met Lys Glu Thr Arg Val Ser Thr Ser Ala Thr Glu
355 360 365

Ile Arg Thr Glu Glu Arg Trp Glu Gly Arg Tyr Gly Leu Gln Glu Gln
370 375 380

Val Thr Ile Ser Gly Ala Ala Ala Gly Glu Val Ala Ala Gly Ala Lys
385 390 395 400

Glu Val Arg Lys Glu Pro Glu Lys Thr Pro Val Pro Thr Val Ile Ile
405 410 415

Ala Thr Asp Lys Ala Lys Glu Gln Glu Arg Ile Ser Thr Ala Arg Glu
420 425 430

Glu Ile Ser Ala Arg His Glu Gln Val His Val Ser His Glu Gln Ile
435 440 445

Glu Ala Gly Lys Arg Ala Glu Ala Val Ala Thr Val Val Ala Ala Val
450 455 460

Asp Gln Ala Arg Val Arg Ser Pro Trp Glu Thr Glu Gln Val Asp Glu
465 470 475 480

Thr Tyr Val Lys Lys Lys Thr Leu Glu Tyr Gly Tyr Lys Glu His Ala
485 490 495

Val Lys Asp His Glu Ala Gln Ala Glu His His Val Ala Thr Lys Glu
500 505 510

Val Lys Thr Val Tyr Val Pro Pro Glu Lys His Ile Pro Ala Ala Glu
515 520 525

Lys Lys Glu Val His Val Ser Thr Glu Ile Lys Arg Glu Thr Glu Ala
530 535 540

Lys Ile Glu Lys Thr Ile His Ile Glu His Pro Arg Pro Arg Thr Ala

```
545                 550                 555                 560

Ser Pro His Phe Thr Val Ser Lys Ile Ala Val Pro Lys Pro Asp His
                565                 570                 575

Thr Tyr Glu Val Ser Ile Ala Gly Ser Ala Met Ala Thr Leu Glu Lys
            580                 585                 590

Glu Leu Ser Ala Thr Ser Ala Ala Gln Lys Ile Thr Lys Pro Val Lys
        595                 600                 605

Pro Pro Gln Leu Lys Pro His Glu Val Lys Ile Lys Pro Glu Ser Ala
    610                 615                 620

Pro Pro Gln Phe Pro Phe Thr Glu Ala Ala Glu Thr Tyr Lys Ala His
625                 630                 635                 640

Tyr Asp Val Glu Thr Lys Lys Glu Val Asp Val Ser Ile Lys Gly Glu
                645                 650                 655

Ala Val Arg Glu Asp His Leu Leu Leu Arg Lys Glu Ser Glu Ala Lys
            660                 665                 670

Val Thr Glu Thr Ala Arg Val Pro Val Pro Ala Glu Ile Pro Val Thr
        675                 680                 685

Pro Pro Thr Leu Val Trp Gly Leu Lys Asn Lys Thr Val Thr Glu Gly
    690                 695                 700

Glu Ser Val Thr Leu Glu Cys His Ile Ser Gly His Pro Gln Pro Thr
705                 710                 715                 720

Val Thr Trp Tyr Arg Glu Asp Tyr Lys Ile Glu Ser Ser Met Asp Phe
                725                 730                 735

Gln Ile Thr Phe Lys Ala Gly Leu Ala Arg Leu Val Ile Arg Glu Ala
            740                 745                 750

Phe Ala Glu Asp Ser Gly Arg Phe Thr Cys Thr Ala Thr Asn Lys Ala
        755                 760                 765

Gly Ser Val Ser Thr Ser Cys His Leu His Val Lys Val Ser Glu Glu
    770                 775                 780

Thr Glu Thr Arg Glu Thr Ile Ser Glu Lys Val Val Thr Glu Glu Lys
785                 790                 795                 800

Ser Tyr Val Glu Thr Lys Asp Val Val Met Glu Asp Val Ser Ala Ala
                805                 810                 815

Ala Glu Glu Val Ser Gly Glu Pro Val Pro Pro Phe Phe Ile Arg Lys
            820                 825                 830

Pro Val Val His Lys Leu Ile Glu Gly Gly Ser Ile Ile Phe Glu Cys
        835                 840                 845

Gln Val Gly Gly Asn Pro Lys Pro His Val Leu Trp Lys Lys Gly Gly
```

```
    850                 855                 860

Val Pro Leu Thr Thr Gly Tyr Arg Tyr Lys Val Ser Tyr Lys Arg Glu
865                 870                 875                 880

Thr Gly Glu Cys Lys Leu Glu Ile Ser Met Thr Phe Ala Asp Asp Ala
                885                 890                 895

Gly Glu Tyr Thr Ile Val Ile Arg Asn Lys Phe Gly Glu Ala Ser Ala
            900                 905                 910

Thr Val Ser Leu Leu Glu Glu Ala Asp Tyr Glu Ala Tyr Ile Lys Ser
        915                 920                 925

Gln Gln Glu Met Met Tyr Gln Thr Gln Val Thr Ala Tyr Val Gln Glu
    930                 935                 940

Pro Lys Val Ala Glu Val Ala Pro Pro Ile Ser Tyr Gly Asp Phe Asp
945                 950                 955                 960

Lys Glu Tyr Glu Lys Glu Gln Ala Leu Ile Arg Lys Lys Met Ala Lys
                965                 970                 975

Asp Thr Val Met Val Arg Thr Phe Val Glu Asp Glu Glu Phe His Ile
            980                 985                 990

Ser Ser Phe Glu Glu Arg Leu Ile Lys Glu Ile Glu Leu Arg Ile Ile
        995                1000                1005

Lys Thr Thr Leu Asp Glu Leu Leu Glu Glu Asp Gly Glu Glu Met Met
   1010                1015                1020

Ile Asp Ile Ser Glu Ser Glu Ala Ile Gly Ala Gly Phe Asp Leu Arg
1025                1030                1035                1040

Leu Lys Asn Tyr Arg Thr Phe Glu Gly Thr Gly Val Thr Phe His Cys
                1045                1050                1055

Lys Thr Thr Gly Tyr Pro Leu Pro Lys Ile Ala Trp Tyr Lys Asp Gly
            1060                1065                1070

Lys Arg Ile Arg His Gly Glu Arg Tyr His Met Glu Val Leu Gln Asp
        1075                1080                1085

Gly Ser Ala Ser Leu Arg Leu Pro Val Val Leu Pro Glu Asp Glu Gly
   1090                1095                1100

Ile Tyr Thr Val Phe Ala Ser Asn Met Lys Gly Asn Ala Ile Cys Ser
1105                1110                1115                1120

Ala Lys Leu Tyr Val Glu Pro Val Ala Pro Thr Ala Thr Pro Gly Tyr
                1125                1130                1135

Met Pro Gly Pro Glu Val Met Arg Arg Tyr Arg Ser Ile Ser Pro Arg
            1140                1145                1150

Ser Pro Ser Arg Ser Pro Ala Arg Ser Ser Pro Ser Cys Ser Pro Ala
```

```
       1155                1160                1165

Arg Arg Leu Asp Glu Thr Asp Glu Gly Gln Leu Glu Arg Leu Tyr Lys
   1170                1175                1180

Pro Val Phe Val Leu Lys Pro Thr Ser Val Lys Cys Ser Gln Gly Gln
1185                1190                1195                1200

Thr Ala Arg Phe Asp Leu Lys Val Val Gly Arg Pro Met Pro Glu Thr
               1205                1210                1215

Tyr Trp Phe His Asn Gly Gln Gln Val Val Asn Asp Tyr Thr His Lys
           1220                1225                1230

Ile Val Ile Lys Glu Asp Gly Thr Gln Ser Leu Ile Ile Val Pro Ala
       1235                1240                1245

Met Pro Glu Asp Ser Gly Glu Trp Ala Val Ile Ala Gln Asn Arg Ala
   1250                1255                1260

Gly Lys Ala Ser Val Ser Val Thr Leu Ser Val Glu Ala Lys Glu Asp
1265                1270                1275                1280

Leu Val Arg Pro Arg Phe Val Glu Arg Leu Arg Asn Val Ser Val Lys
               1285                1290                1295

Glu Gly Ser Arg Leu His Met Ala Val Lys Ala Thr Gly Asn Pro Asn
           1300                1305                1310

Pro Asp Ile Val Trp Leu Lys Asn Ser Asp Ile Ile Val Pro His Lys
       1315                1320                1325

Tyr Pro Arg Ile Arg Ile Glu Gly Thr Lys Gly Ala Ala Ala Leu Asn
   1330                1335                1340

Ile Glu Ser Thr Ala Arg Gln Asp Ala Ala Trp Tyr Thr Ala Thr Ala
1345                1350                1355                1360

Ile Asn Lys Ala Gly Arg Asp Thr Thr Arg Cys Lys Val Asn Val Glu
               1365                1370                1375

Val Glu His Ala Glu Pro Glu Pro Glu Arg Arg Leu Ile Ile Pro Lys
           1380                1385                1390

Gly Thr Tyr Lys Ala Lys Glu Ile Ala Ala Pro Glu Leu Glu Pro Leu
       1395                1400                1405

His Leu Arg Tyr Gly Gln Glu Gln Trp Glu Glu Gly Asp Leu Tyr Asp
   1410                1415                1420

Lys Glu Lys Gln Gln Lys Pro Phe Phe Lys Lys Lys Leu Thr Ser Leu
1425                1430                1435                1440

Arg Leu Lys Gln Phe Gly Pro Ala His Phe Glu Cys Arg Leu Thr Pro
               1445                1450                1455

Ile Gly Asp Pro Thr Met Val Val Glu Trp Leu His Asp Gly Lys Pro
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          1460                1465                1470

Leu Glu Ala Ala Asn Arg Leu Arg Met Ile Asn Glu Phe Gly Tyr Cys
       1475                1480                1485

Ser Leu Asp Tyr Gly Val Ala Tyr Ser Arg Asp Ser Gly Val Ile Thr
   1490                1495                1500

Cys Arg Ala Thr Asn Lys Tyr Gly Thr Asp His Thr Ser Ala Thr Leu
1505                1510                1515                1520

Ile Val Lys Asp Glu Lys Ser Leu Val Glu Glu Ser Gln Leu Pro Glu
               1525                1530                1535

Gly Arg Arg Gly Met Gln Arg Ile Glu Glu Leu Glu Arg Met Ala His
           1540                1545                1550

Glu Gly Ala Leu Pro Ala Val Ala Val Asp Gln Lys Glu Lys Gln Lys
       1555                1560                1565

Pro Glu Leu Val Leu Val Pro Glu Pro Ala Arg Val Leu Glu Gly Glu
   1570                1575                1580

Thr Ala Arg Phe Arg Cys Arg Val Thr Gly Tyr Pro Leu Pro Lys Val
1585                1590                1595                1600

Asn Trp Tyr Leu Asn Ser Gln Leu Ile Arg Lys Ser Lys Arg Phe Arg
               1605                1610                1615

Leu Arg Tyr Asp Gly Ile His Tyr Leu Asp Ile Val Asp Cys Lys Ser
           1620                1625                1630

Tyr Asp Thr Gly Glu Val Lys Val Thr Ala Glu Asn Pro Glu Gly Phe
       1635                1640                1645

Ile Glu His Lys Val Lys Leu Glu Ile Gln Gln Arg Glu Asp Phe Arg
   1650                1655                1660

Ser Val Leu Arg Arg Ala Pro Glu Pro Arg His Glu Pro Val Val Thr
1665                1670                1675                1680

Glu Pro Gly Lys Leu Leu Phe Glu Val Gln Lys Ile Asp Lys Pro Ala
               1685                1690                1695

Glu Ala Thr Thr Lys Glu Val Val Lys Leu Lys Arg Ala Glu Arg Ile
           1700                1705                1710

Thr His Glu Lys Leu Ser Glu Glu Ser Glu Glu Leu Arg Ser Lys Phe
       1715                1720                1725

Lys Arg Arg Thr Glu Glu Gly Tyr Tyr Glu Ala Ile Thr Ala Val Glu
   1730                1735                1740

Leu Lys Ser Arg Lys Lys Asp Glu Ser Tyr Glu Glu Met Leu Lys Lys
1745                1750                1755                1760

Thr Lys Glu Glu Leu Leu His Trp Thr Lys Glu Ile Pro Glu Glu Glu
```

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                1765                1770                1775

Lys Lys Ala Leu Pro Pro Glu Gly Lys Ile Thr Ile Pro Thr Phe Lys
            1780                1785                1790

Pro Glu Lys Val Glu Leu Ser Pro Ser Met Glu Ala Pro Lys Ile Phe
        1795                1800                1805

Glu Arg Ile Gln Ser Gln Thr Val Ala Gln Gly Thr Asp Ala His Phe
    1810                1815                1820

Arg Val Arg Val Val Gly Lys Pro Asp Pro Glu Cys Gln Trp Phe Arg
1825                1830                1835                1840

Asn Gly Val Gln Ile Glu Arg Thr Asp Arg Ile Tyr Trp Tyr Trp Pro
                1845                1850                1855

Glu Asp Asn Val Cys Glu Leu Val Ile Arg Asp Val Thr Ala Asp Asp
            1860                1865                1870

Ser Ala Ser Ile Met Val Lys Ala Val Asn Ile Ala Gly Glu Thr Ser
        1875                1880                1885

Ser His Ala Phe Leu Leu Val Gln Ala Lys Gln Leu Ile Ser Phe Ile
    1890                1895                1900

Gln Asn Leu Gln Asp Val Val Ala Lys Glu Arg Asp Ser Met Ala Thr
1905                1910                1915                1920

Phe Glu Cys Glu Thr Ser Glu Pro Phe Ile Lys Val Lys Trp Phe Lys
                1925                1930                1935

Asn Gly Ile Glu Ile His Ser Gly Glu Lys Tyr Arg Met His Ser Asp
            1940                1945                1950

Arg Lys Ala His Phe Leu Ser Val Leu Ala Val Glu Met Ser Asp Ala
        1955                1960                1965

Asp Asp Tyr Ser Cys Ala Leu Val Glu Asp Glu Ser Val Lys Thr Thr
    1970                1975                1980

Ala Lys Leu Ile Val Glu Gly Ala Val Val Glu Phe Ile Lys Glu Leu
1985                1990                1995                2000

Glu Asp Val Glu Val Pro Glu Ser Phe Thr Gly Glu Leu Glu Cys Glu
                2005                2010                2015

Val Ser Pro Glu Asp Ile Glu Gly Lys Trp Tyr His Gly Asp Val Glu
            2020                2025                2030

Leu Ser Ser Asn His Lys Tyr Val Leu Ala Ser Arg Arg Gly Arg Arg
        2035                2040                2045

Ile Leu Thr Ile Lys Asp Val Asn Lys Asp Asp Gln Gly Glu Tyr Ser
    2050                2055                2060

Phe Val Val Asp Gly Lys Arg Thr His Cys Lys Leu Lys Met Lys Pro
```

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2065                2070                2075                2080

Arg Pro Met Thr Ile Leu Gln Gly Leu Thr Asp Gln Lys Val Cys Glu
                2085                2090                2095

Gly Asp Ile Val Gln Leu Glu Val Lys Val Ser Val Glu Asn Val Glu
            2100                2105                2110

Gly Val Trp Met Lys Asp Gly His Glu Ile Gln Ser Ser Asp Arg Ile
        2115                2120                2125

His Ile Val Leu Asp Lys Gln Ser His Met Leu Leu Ile Glu Asp Ala
    2130                2135                2140

Thr Gln Glu Asp Ser Gly Thr Tyr Ser Phe Ser Ile Pro Gly Leu Glu
2145                2150                2155                2160

Leu Ser Thr Thr Gly Gln Val Thr Val Tyr Ser Val Glu Ile Ile Val
                2165                2170                2175

Pro Leu Lys Asp Val His Val Val Glu Gly Thr Lys Ala Ile Leu Glu
            2180                2185                2190

Cys Lys Val Ser Ala Pro Asp Val Thr Ser Ser Lys Trp Tyr Leu Asn
        2195                2200                2205

Asp His Gln Ile Lys Pro Asp Glu Arg Val Gln Ala Val Cys Lys Gly
    2210                2215                2220

Thr Lys Gln Arg Leu Val Ile Thr Arg Thr His Ala Ser Asp Glu Gly
2225                2230                2235                2240

His Tyr Lys Leu Met Val Gly Lys Val Glu Thr Ser Cys Asn Val Thr
                2245                2250                2255

Val Glu Glu Ile Glu Ile Ile Arg Gly Leu His Asp Ile Thr Cys Thr
            2260                2265                2270

Glu Thr Gln Asn Val Ser Phe Glu Val Glu Leu Ser His Ser Gly Ile
        2275                2280                2285

Asp Val Ile Trp His Phe Lys Gly Gln Glu Ile Lys Ala Gly Pro Lys
    2290                2295                2300

Tyr Lys Ile Glu Ala Arg Gly Lys Ile Tyr Lys Leu Thr Val Val Lys
2305                2310                2315                2320

Met Met Lys Asp Asp Glu Gly Glu Tyr Val Phe Tyr Ala Gly Gly Lys
                2325                2330                2335

Lys Thr Ser Gly Lys Leu Ile Val Ala Gly Gly Ala Ile Ser Lys Pro
            2340                2345                2350

Leu Ala Asp Leu Thr Val Ala Glu Ser Gln Arg Ala Val Phe Glu Cys
        2355                2360                2365

Glu Val Ala Asn Pro Glu Ser Glu Gly Gln Trp Leu Lys Asn Gly Lys
```

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   2370                2375                2380

Pro Leu Pro Met Thr Asp Gln Tyr Arg Ala Glu Thr Asp Gly Val Lys
2385                2390                2395                2400

Arg Arg Leu Asn Ile Pro Ala Ala Lys Met Asp Asp Met Gly Glu Tyr
                2405                2410                2415

Ser Tyr Glu Ile Ala Ser Ser Lys Thr Ser Ala Lys Leu His Val Glu
            2420                2425                2430

Ala Val Lys Ile Lys Lys Thr Leu Lys Asn Leu Thr Val Thr Glu Thr
        2435                2440                2445

Gln Glu Ala Val Phe Ser Val Glu Leu Ser His Pro Asp Val Lys Gly
    2450                2455                2460

Ala Leu Trp Ile Lys Asn Gly Val Glu Leu Glu Ser Asn Asp Lys Tyr
2465                2470                2475                2480

Glu Ile Ser Val Lys Gly Thr Val His Thr Leu Lys Ile Lys His Cys
                2485                2490                2495

Val Val Thr Asp Glu Ser Val Tyr Ser Phe Lys Leu Gly Lys Ile Gly
            2500                2505                2510

Ala Asn Ala Arg Leu His Val Glu Thr Val Lys Ile Ile Lys Lys Pro
        2515                2520                2525

Lys Asp Val Thr Ala Leu Glu Asn Ala Val Val Ser Phe Glu Leu Ser
    2530                2535                2540

Val Ser His Asp Thr Val Pro Val Arg Trp Phe His Lys Asn Val Glu
2545                2550                2555                2560

Leu Lys Gln Ser Asp Lys Tyr Lys Met Ile Ser Gln Arg Lys Val His
                2565                2570                2575

Lys Leu Met Leu His Asn Ile Ser Pro Ala Asp Ala Gly Glu Tyr Thr
            2580                2585                2590

Ala Phe Val Gly Gln Leu Glu Cys Lys Ala Lys Leu Phe Val Glu Thr
        2595                2600                2605

Ile His Ile Thr Lys Thr Met Lys Ser Ile Glu Ile Pro Glu Thr Lys
    2610                2615                2620

Thr Ala Ser Phe Gln Cys Glu Val Ser His Phe Asn Val Pro Ser Val
2625                2630                2635                2640

Trp Leu Lys Asn Gly Val Glu Ile Glu Met Ser Glu Lys Phe Lys Ile
                2645                2650                2655

Val Val Gln Gly Lys Leu His Gln Leu Asn Ile Met Asn Thr Ser Ser
            2660                2665                2670

Glu Asp Ser Ala Glu Tyr Thr Phe Val Cys Gly Asn Asp Arg Val Ser
```

2675 2680 2685

Ala Thr Leu Thr Val Lys Pro Ile Leu Ile Thr Ser Met Leu Glu Asp
2690 2695 2700

Ile Asn Ala Glu Glu Lys Asp Thr Ile Thr Phe Glu Val Thr Val Asn
2705 2710 2715 2720

Tyr Glu Gly Ile Ser Tyr Lys Trp Leu Lys Asn Gly Val Glu Ile Lys
2725 2730 2735

Ser Thr Asp Lys Cys Gln Ile Arg Thr Lys Lys Leu Thr His Ser Leu
2740 2745 2750

Ser Ile Arg Asn Val His Phe Gly Asp Ala Ala Glu Tyr Ser Phe Val
2755 2760 2765

Ala Gly Lys Ala Ala Ser Ser Ala Thr Leu Tyr Val Glu Ala Arg His
2770 2775 2780

Ile Glu Phe Arg Lys His Ile Lys Asp Ile Lys Val Val Glu Lys Lys
2785 2790 2795 2800

Arg Ala Ile Phe Glu Cys Glu Ile Ser Glu Pro Asp Val Gln Val Gln
2805 2810 2815

Trp Met Lys Asp Gly Gln Glu Leu Gln Ile Gly Asp Arg Met Lys Ile
2820 2825 2830

Gln Arg Glu Lys Tyr Val His Arg Leu Ile Ile Pro Ser Thr Lys Met
2835 2840 2845

Ser Asp Ala Gly Gln Tyr Thr Val Val Ala Gly Gly Asn Thr Ser Ser
2850 2855 2860

Ala Asn Leu Ile Val Glu Gly Arg Asp Val Arg Ile Arg Ser Ile Arg
2865 2870 2875 2880

Lys Glu Ile Gln Val Ile Glu Arg Gln Arg Ala Glu Ile Glu Phe Glu
2885 2890 2895

Val Asn Glu Asp Asp Ile Glu Pro Gln Trp Tyr Lys Asp Gly Ile Glu
2900 2905 2910

Ile Asn Phe His Tyr Glu Glu Arg Tyr Ser Tyr Val Val Glu Arg Arg
2915 2920 2925

Ile His Arg Met Ser Ile Phe Glu Thr Thr Tyr Ser Asp Ala Gly Glu
2930 2935 2940

Tyr Thr Phe Val Ala Gly Arg Asn Arg Ser Ser Val Val Leu Tyr Val
2945 2950 2955 2960

Asn Ala Pro Glu Pro Pro Gln Ile Ile Gln Glu Leu Gln Pro Thr Thr
2965 2970 2975

Val Glu Ser Gly Lys Pro Ala Arg Phe Cys Ala Ile Ile Ser Gly Lys

```
          2980                2985                2990

Pro Gln Pro Lys Val Ser Trp Tyr Lys Asp Asp Gln Gln Leu Ser Pro
       2995                3000                3005

Gly Phe Lys Cys Lys Phe Leu His Asp Ala Gln Glu Tyr Thr Leu Leu
   3010                3015                3020

Leu Ile Glu Thr Phe Pro Glu Asp Ser Ala Val Tyr Thr Cys Glu Ala
3025                3030                3035                3040

Lys Asn Asp Tyr Gly Val Ala Thr Thr Ser Ala Ser Leu Ser Val Glu
                3045                3050                3055

Ile Pro Glu Val Val Ser Pro Glu Leu Glu Val Pro Val Tyr Pro Pro
            3060                3065                3070

Ala Val Ile Val Pro Leu Arg Asp Ala Val Thr Ser Glu Gly Gln Ser
       3075                3080                3085

Ala Arg Phe Gln Cys Arg Val Thr Gly Thr Asp Leu Lys Val Ser Trp
   3090                3095                3100

Tyr Ser Lys Asp Arg Glu Ile Lys Pro Ser Arg Phe Phe Arg Met Thr
3105                3110                3115                3120

Gln Phe Glu Asp Thr Tyr Gln Leu Glu Ile Ala Glu Ala Tyr Pro Glu
                3125                3130                3135

Asp Glu Gly Thr Tyr Thr Phe Val Ala Ser Asn Ser Val Gly Gln Val
            3140                3145                3150

Thr Ser Thr Ala Ile Leu Lys Leu Glu Ala Pro Glu Lys Ile Met Tyr
       3155                3160                3165

Glu Lys Leu Glu Glu Glu Ile Glu Met Glu Val Lys Val Ala Pro Ile
   3170                3175                3180

Leu Arg Arg Arg Leu Glu Pro Leu Glu Val Ala Val Asn His Val Ala
3185                3190                3195                3200

Lys Phe Thr Cys Glu Val Glu Thr Thr Pro Asn Val Lys Phe Gln Trp
                3205                3210                3215

Tyr Lys Ala Gly Arg Glu Ile Tyr Asp Gly Asp Lys Tyr Ser Ile Arg
            3220                3225                3230

Ser Ser Asn Tyr Leu Ser Thr Leu Glu Ile Pro Arg Pro Gln Val Val
       3235                3240                3245

Asp Cys Gly Glu Tyr Ser Cys Lys Ala Ser Asn Gln His Gly Ser Val
   3250                3255                3260

Ser Ser Thr Ala Phe Leu Thr Val Thr Glu Pro Pro Arg Phe Ile Lys
3265                3270                3275                3280

Lys Leu Asp Ser Ser Arg Leu Val Lys Gln His Asp Ser Thr Arg Tyr
```

```
                3285                3290                3295

Glu Cys Lys Val Gly Gly Ser Pro Glu Ile Lys Val Thr Trp Tyr Lys
            3300                3305                3310

Gly Glu Thr Glu Ile His Pro Ser Glu Lys Tyr Ser Met Ser Phe Val
        3315                3320                3325

Asp Ser Val Ala Val Leu Glu Met His Asn Leu Ser Val Glu Asp Ser
    3330                3335                3340

Gly Asp Tyr Ser Cys Glu Ala Gln Asn Pro Ala Gly Ser Ala Ser Thr
3345                3350                3355                3360

Ser Thr Ser Leu Lys Val Lys Ala Pro Pro Ala Phe Thr Lys Lys Pro
                3365                3370                3375

His Pro Val Gln Thr Leu Lys Gly Ser Asp Val His Leu Glu Cys Glu
            3380                3385                3390

Leu Gln Gly Thr Pro Pro Phe Gln Ile Ser Trp Tyr Lys Asp Lys Arg
        3395                3400                3405

Glu Ile Arg Ser Ser Lys Lys Tyr Lys Val Met Ser Glu Asn Tyr Leu
    3410                3415                3420

Ala Ser Ile His Ile Leu Asn Val Asp Thr Ala Asp Val Gly Glu Tyr
3425                3430                3435                3440

His Cys Lys Ala Val Asn Asp Val Gly Ser Asp Ser Cys Ile Gly Ser
                3445                3450                3455

Val Thr Leu Arg Ala Pro Pro Thr Phe Val Lys Lys Leu Ser Asp Val
            3460                3465                3470

Thr Val Val Val Gly Glu Thr Ile Glu Leu Gln Ala Ala Val Glu Gly
        3475                3480                3485

Ala Gln Pro Ile Ser Val Leu Trp Leu Lys Asp Lys Gly Glu Ile Ile
    3490                3495                3500

Arg Glu Ser Glu Asn Leu Trp Ile Ser Tyr Ser Glu Asn Val Ala Ser
3505                3510                3515                3520

Leu Lys Ile Gly Asn Ala Glu Pro Thr Asn Ala Gly Lys Tyr Ile Cys
                3525                3530                3535

Gln Ile Lys Asn Asp Ala Gly Phe Gln Glu Cys Phe Ala Lys Leu Thr
            3540                3545                3550

Val Leu Glu Pro Ala Val Ile Val Glu Lys Pro Gly Pro Val Lys Val
        3555                3560                3565

Thr Ala Gly Asp Ser Cys Thr Leu Glu Cys Thr Val Asp Gly Thr Pro
    3570                3575                3580

Glu Leu Thr Ala Arg Trp Phe Lys Asp Gly Asn Glu Leu Ser Thr Asp
```

```
3585                3590                3595                3600

His Lys Tyr Lys Ile Ser Phe Phe Asn Lys Val Ser Gly Leu Lys Ile
                3605                3610                3615

Leu Asn Ala Gly Leu Glu Asp Ser Gly Glu Tyr Thr Phe Glu Val Lys
            3620                3625                3630

Asn Ser Val Gly Lys Ser Ser Cys Thr Ala Ser Leu Gln Val Ser Asp
        3635                3640                3645

Arg Ile Met Pro Pro Ser Phe Thr Arg Lys Leu Lys Glu Thr Tyr Gly
    3650                3655                3660

Gln Leu Gly Ser Ser Ala Val Leu Glu Cys Lys Val Tyr Gly Ser Pro
3665                3670                3675                3680

Pro Ile Leu Val Ser Trp Phe His Asp Gly Gln Glu Ile Thr Ser Gly
                3685                3690                3695

Asp Lys Tyr Gln Ala Thr Leu Thr Asp Asn Thr Cys Ser Leu Lys Val
            3700                3705                3710

Asn Gly Leu Gln Glu Ser Asp Met Gly Thr Tyr Ser Cys Thr Ala Thr
        3715                3720                3725

Asn Val Ala Gly Ser Asp Glu Cys Ser Ala Phe Leu Ser Val Arg Glu
    3730                3735                3740

Pro Pro Ser Phe Val Lys Lys Pro Glu Pro Phe Asn Val Leu Ser Gly
3745                3750                3755                3760

Glu Asn Ile Thr Phe Thr Ser Ile Val Lys Gly Ser Pro Pro Leu Glu
                3765                3770                3775

Val Lys Trp Phe Arg Gly Ser Ile Glu Leu Ala Pro Gly His Lys Cys
            3780                3785                3790

Asn Ile Thr Leu Gln Asp Ser Val Ala Glu Leu Glu Leu Phe Asp Val
        3795                3800                3805

Gln Pro Leu Gln Ser Gly Asp Tyr Thr Cys Gln Val Ser Asn Glu Ala
    3810                3815                3820

Gly Lys Ile Ser Cys Thr Thr His Leu Phe Val Lys Glu Pro Ala Lys
3825                3830                3835                3840

Phe Val Met Lys Val Asn Asp Leu Ser Val Glu Lys Gly Lys Asn Leu
                3845                3850                3855

Ile Leu Glu Cys Thr Tyr Thr Gly Thr Pro Pro Ile Ser Val Thr Trp
            3860                3865                3870

Lys Lys Asn Gly Val Ile Leu Lys His Ser Glu Lys Cys Ser Ile Thr
        3875                3880                3885

Thr Thr Glu Thr Ser Ala Ile Leu Glu Ile Pro Asn Ser Lys Leu Glu
```

```
   3890                3895                3900

Asp Gln Gly Gln Tyr Ser Cys His Ile Glu Asn Asp Ser Gly Gln Asp
3905                3910                3915                3920

Asn Cys His Gly Ala Ile Thr Ile Leu Glu Pro Pro Tyr Phe Val Thr
                3925                3930                3935

Pro Leu Glu Pro Val Gln Val Thr Val Gly Asp Ser Ala Ser Leu Gln
            3940                3945                3950

Cys Gln Val Ala Gly Thr Pro Glu Met Ile Val Ser Trp Tyr Lys Gly
        3955                3960                3965

Asp Thr Lys Leu Arg Gly Thr Ala Thr Val Lys Met His Phe Lys Asn
    3970                3975                3980

Gln Val Ala Thr Leu Val Phe Ser Gln Val Asp Ser Asp Asp Ser Gly
3985                3990                3995                4000

Glu Tyr Ile Cys Lys Val Glu Asn Thr Val Gly Glu Ala Thr Ser Ser
                4005                4010                4015

Ser Leu Leu Thr Val Gln Glu Arg Lys Leu Pro Pro Ser Phe Thr Arg
            4020                4025                4030

Lys Leu Arg Asp Val His Glu Thr Val Gly Leu Pro Val Thr Phe Asp
        4035                4040                4045

Cys Gly Ile Ala Gly Ser Glu Pro Ile Glu Val Ser Trp Phe Lys Asp
    4050                4055                4060

Asn Val Arg Val Lys Glu Asp Tyr Asn Val His Thr Ser Phe Ile Asp
4065                4070                4075                4080

Asn Val Ala Ile Leu Gln Ile Leu Lys Thr Asp Lys Ser Leu Met Gly
                4085                4090                4095

Gln Tyr Thr Cys Thr Ala Ser Asn Ala Ile Gly Thr Ala Ser Ser Ser
            4100                4105                4110

Gly Lys Leu Val Leu Thr Glu Gly Lys Thr Pro Pro Phe Phe Asp Thr
        4115                4120                4125

Pro Ile Thr Pro Val Asp Gly Ile Ile Gly Glu Ser Ala Asp Phe Glu
    4130                4135                4140

Cys His Ile Ser Gly Thr Gln Pro Ile Arg Val Thr Trp Ala Lys Asp
4145                4150                4155                4160

Asn Gln
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<212> PRT

<213> Homo sapiens

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Met Ile Ser Trp Glu Val Val His Thr Val Phe Leu Phe Ala Leu Leu
  1               5                  10                  15

Tyr Ser Ser Leu Ala Gln Asp Ala Ser Pro Gln Ser Glu Ile Arg Ala
             20                  25                  30

Glu Glu Phe Pro Glu Gly Ala Ser Thr Leu Ala Phe Val Phe Asp Val
         35                  40                  45

Thr Gly Ser Met Tyr Asp Asp Leu Val Gln Val Ile Glu Gly Ala Ser
     50                  55                  60

Lys Ile Leu Glu Thr Ser Leu Lys Arg Pro Lys Arg Pro Leu Phe Asn
 65                  70                  75                  80

Phe Ala Leu Val Pro Phe His Asp Pro Glu Ile Gly Pro Val Thr Ile
                 85                  90                  95

Thr Thr Asp Pro Lys Lys Phe Gln Tyr Glu Leu Arg Glu Leu Tyr Val
            100                 105                 110

Gln Gly Gly Gly Asp Cys Pro Glu Met Ser Ile Gly Ala Ile Lys Ile
        115                 120                 125

Ala Leu Glu Ile Ser Leu Pro Gly Ser Phe Ile Tyr Val Phe Thr Asp
    130                 135                 140

Ala Arg Ser Lys Asp Tyr Arg Leu Thr His Glu Val Leu Gln Leu Ile
145                 150                 155                 160

Gln Gln Lys Gln Ser Gln Val Val Phe Val Leu Thr Gly Asp Cys Asp
                165                 170                 175

Asp Arg Thr His Ile Gly Tyr Lys Val Tyr Glu Glu Ile Ala Ser Thr
            180                 185                 190
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Ser Ser Gly Gln Val Phe His Leu Asp Lys Lys Gln Val Asn Glu Val
        195                 200                 205

Leu Lys Trp Val Glu Glu Ala Val Gln Ala Ser Lys Val His Leu Leu
    210                 215                 220

Ser Thr Asp His Leu Glu Gln Ala Val Asn Thr Trp Arg Ile Pro Phe
225                 230                 235                 240

Asp Pro Ser Leu Lys Glu Val Thr Val Ser Leu Ser Gly Pro Ser Pro
                245                 250                 255

Met Ile Glu Ile Arg Asn Pro Leu Gly Lys Leu Ile Lys Lys Gly Phe
            260                 265                 270

Gly Leu His Glu Leu Leu Asn Ile His Asn Ser Ala Lys Val Val Asn
        275                 280                 285

Val Lys Glu Pro Glu Ala Gly Met Trp Thr Val Lys Thr Ser Ser Ser
    290                 295                 300

Gly Arg His Ser Val Arg Ile Thr Gly Leu Ser Thr Ile Asp Phe Arg
305                 310                 315                 320

Ala Gly Phe Ser Arg Lys Pro Thr Leu Asp Phe Lys Lys Thr Val Ser
                325                 330                 335

Arg Pro Val Gln Gly Ile Pro Thr Tyr Val Leu Leu Asn Thr Ser Gly
            340                 345                 350

Ile Ser Thr Pro Ala Arg Ile Asp Leu Leu Glu Leu Leu Ser Ile Ser
        355                 360                 365

Gly Ser Ser Leu Lys Thr Ile Pro Val Lys Tyr Tyr Pro His Arg Lys
    370                 375                 380

Pro Tyr Gly Ile Trp Asn Ile Ser Asp Phe Val Pro Pro Asn Glu Ala
385                 390                 395                 400

Phe Phe Leu Lys Val Thr Gly Tyr Asp Lys Asp Asp Tyr Leu Phe Gln
                405                 410                 415

Arg Val Ser Ser Val Ser Phe Ser Ser Ile Val Pro Asp Ala Pro Lys
            420                 425                 430

Val Thr Met Pro Glu Lys Thr Pro Gly Tyr Tyr Leu Gln Pro Gly Gln
        435                 440                 445

Ile Pro Cys Ser Val Asp Ser Leu Leu Pro Phe Thr Leu Ser Phe Val
    450                 455                 460

Arg Asn Gly Val Thr Leu Gly Val Asp Gln Tyr Leu Lys Glu Ser Ala
465                 470                 475                 480

Ser Val Ser Leu Asp Ile Ala Lys Val Thr Leu Ser Asp Glu Gly Phe
                485                 490                 495
```

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Tyr Glu Cys Ile Ala Val Ser Ser Ala Gly Thr Gly Arg Ala Gln Thr
            500                 505                 510

Phe Phe Asp Val Ser Glu Pro Pro Pro Val Ile Gln Val Pro Asn Asn
        515                 520                 525

Val Thr Val Thr Pro Gly Glu Arg Ala Val Leu Thr Cys Leu Ile Ile
    530                 535                 540

Ser Ala Val Asp Tyr Asn Leu Thr Trp Gln Arg Asn Asp Arg Asp Val
545                 550                 555                 560

Arg Leu Ala Glu Pro Ala Arg Ile Arg Thr Leu Ala Asn Leu Ser Leu
                565                 570                 575

Glu Leu Lys Ser Val Lys Phe Asn Asp Ala Gly Glu Tyr His Cys Met
            580                 585                 590

Val Ser Ser Glu Gly Gly Ser Ser Ala Ala Ser Val Phe Leu Thr Val
        595                 600                 605

Gln Glu Pro Pro Lys Val Thr Val Met Pro Lys Asn Gln Ser Phe Thr
    610                 615                 620

Gly Gly Ser Glu Val Ser Ile Met Cys Ser Ala Thr Gly Tyr Pro Lys
625                 630                 635                 640

Pro Lys Ile Ala Trp Thr Val Asn Asp Met Phe Ile Val Gly Ser His
                645                 650                 655

Arg Tyr Arg Met Thr Ser Asp Gly Thr Leu Phe Ile Lys Asn Ala Ala
            660                 665                 670

Pro Lys Asp Ala Gly Ile Tyr Gly Cys Leu Ala Ser Asn Ser Ala Gly
        675                 680                 685

Thr Asp Lys Gln Asn Ser Thr Leu Arg Tyr Ile Glu Ala Pro Lys Leu
    690                 695                 700

Met Val Val Gln Ser Glu Leu Leu Val Ala Leu Gly Asp Ile Thr Val
705                 710                 715                 720

Met Glu Cys Lys Thr Ser Gly Ile Pro Pro Pro Gln Val Lys Trp Phe
                725                 730                 735

Lys Gly Asp Leu Glu Leu Arg Pro Ser Thr Phe Leu Ile Ile Asp Pro
            740                 745                 750

Leu Leu Gly Leu Leu Lys Ile Gln Glu Thr Gln Asp Leu Asp Ala Gly
        755                 760                 765

Asp Tyr Thr Cys Val Ala Ile Asn Glu Ala Gly Arg Ala Thr Gly Lys
    770                 775                 780

Ile Thr Leu Asp Val Gly Ser Pro Pro Val Phe Ile Gln Glu Pro Ala
785                 790                 795                 800
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Asp Val Ser Met Glu Ile Gly Ser Asn Val Thr Leu Pro Cys Tyr Val
                805                 810                 815

Gln Gly Tyr Pro Glu Pro Thr Ile Lys Trp Arg Arg Leu Asp Asn Met
            820                 825                 830

Pro Ile Phe Ser Arg Pro Phe Ser Val Ser Ser Ile Ser Gln Leu Arg
        835                 840                 845

Thr Gly Ala Leu Phe Ile Leu Asn Leu Trp Ala Ser Asp Lys Gly Thr
    850                 855                 860

Tyr Ile Cys Glu Ala Glu Asn Gln Phe Gly Lys Ile Gln Ser Glu Thr
865                 870                 875                 880

Thr Val Thr Val Thr Gly Leu Val Ala Pro Leu Ile Gly Ile Ser Pro
                885                 890                 895

Ser Val Ala Asn Val Ile Glu Gly Gln Gln Leu Thr Leu Pro Cys Thr
            900                 905                 910

Leu Leu Ala Gly Asn Pro Ile Pro Glu Arg Arg Trp Ile Lys Asn Ser
        915                 920                 925

Ala Met Leu Leu Gln Asn Pro Tyr Ile Thr Val Arg Ser Asp Gly Ser
    930                 935                 940

Leu His Ile Glu Arg Val Gln Leu Gln Asp Gly Gly Glu Tyr Thr Cys
945                 950                 955                 960

Val Ala Ser Asn Val Ala Gly Thr Asn Asn Lys Thr Thr Ser Val Val
                965                 970                 975

Val His Val Leu Pro Thr Ile Gln His Gly Gln Gln Ile Leu Ser Thr
            980                 985                 990

Ile Glu Gly Ile Pro Val Thr Leu Pro Cys Lys Ala Ser Gly Asn Pro
        995                1000                1005

Lys Pro Ser Val Ile Trp Ser Lys Lys Gly Glu Leu Ile Ser Thr Ser
   1010                1015                1020

Ser Ala Lys Phe Ser Ala Gly Ala Asp Gly Ser Leu Tyr Val Val Ser
1025                1030                1035                1040

Pro Glu Gly Glu Glu Ser Gly Glu Tyr Val Cys Thr Ala Thr Asn Thr
                1045                1050                1055

Ala Gly Tyr Ala Lys Arg Lys Val Gln Leu Thr Val Tyr Val Arg Pro
            1060                1065                1070

Arg Val Phe Gly Asp Leu Arg Gly Leu Ser Gln Asp Lys Pro Val Glu
        1075                1080                1085

Ile Ser Val Leu Ala Gly Glu Glu Val Thr Leu Pro Cys Glu Val Lys
   1090                1095                1100
```

```
Ser Leu Pro Pro Pro Ile Ile Thr Trp Ala Lys Glu Thr Gln Leu Ile
1105                1110                1115                1120

Ser Pro Phe Ser Pro Arg His Thr Phe Leu Pro Ser Gly Ser Met Lys
                1125                1130                1135

Ile Thr Glu Thr Arg Thr Ser Asp Ser Gly Met Tyr Leu Cys Val Ala
            1140                1145                1150

Thr Asn Ile Ala Gly Asn Val Thr Gln Ala Val Lys Leu Asn Val His
        1155                1160                1165

Val Pro Pro Lys Ile Gln Arg Gly Pro Lys His Leu Lys Val Gln Val
    1170                1175                1180

Gly Gln Arg Val Asp Ile Pro Cys Asn Ala Gln Gly Thr Pro Leu Pro
1185                1190                1195                1200

Val Ile Thr Trp Ser Lys Gly Gly Ser Thr Met Leu Val Asp Gly Glu
                1205                1210                1215

His His Val Ser Asn Pro Asp Gly Thr Leu Ser Ile Asp Gln Ala Thr
            1220                1225                1230

Pro Ser Asp Ala Gly Ile Tyr Thr Cys Val Ala Thr Asn Ile Ala Gly
        1235                1240                1245

Thr Asp Glu Thr Glu Ile Thr Leu His Val Gln Glu Pro Pro Thr Val
    1250                1255                1260

Glu Asp Leu Glu Pro Pro Tyr Asn Thr Thr Phe Gln Glu Arg Val Ala
1265                1270                1275                1280

Asn Gln Arg Ile Glu Phe Pro Cys Pro Ala Lys Gly Thr Pro Lys Pro
                1285                1290                1295

Thr Ile Lys Trp Leu His Asn Gly Arg Glu Leu Thr Gly Arg Glu Pro
            1300                1305                1310

Gly Ile Ser Ile Leu Glu Glu Gly Thr Leu Leu Val Ile Ala Ser Val
        1315                1320                1325

Thr Pro Tyr Asp Asn Gly Glu Tyr Ile Cys Val Ala Val Asn Glu Ala
    1330                1335                1340

Gly Thr Thr Glu Arg Lys Tyr Asn Leu Lys Val His Val Pro Pro Val
1345                1350                1355                1360

Ile Lys Asp Lys Glu Gln Val Ser Asn Val Ser Val Leu Leu Asn Gln
                1365                1370                1375

Leu Thr Asn Leu Phe Cys Glu Val Glu Gly Thr Pro Ser Pro Ile Ile
            1380                1385                1390

Met Trp Tyr Lys Asp Asn Val Gln Val Thr Glu Ser Ser Thr Ile Gln
        1395                1400                1405
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Thr Val Asn Asn Gly Lys Ile Leu Lys Leu Phe Arg Ala Thr Pro Glu
   1410                1415                1420

Asp Ala Gly Arg Tyr Ser Cys Lys Ala Ile Asn Ile Ala Gly Thr Ser
1425                1430                1435                1440

Gln Lys Tyr Phe Asn Ile Asp Val Leu Val Pro Pro Thr Ile Ile Gly
               1445                1450                1455

Thr Asn Phe Pro Lys Glu Val Ser Val Val Leu Asn Arg Asp Val Ala
           1460                1465                1470

Leu Glu Cys Gln Val Lys Gly Thr Pro Phe Pro Asp Ile His Trp Phe
       1475                1480                1485

Lys Asp Gly Lys Pro Leu Phe Leu Gly Asp Pro Asn Val Glu Leu Leu
   1490                1495                1500

Asp Arg Gly Gln Val Leu His Leu Lys Asn Ala Arg Arg Asn Asp Lys
1505                1510                1515                1520

Gly Arg Tyr Gln Cys Thr Val Ser Asn Ala Ala Gly Lys Gln Ala Lys
               1525                1530                1535

Asp Ile Lys Leu Thr Ile Tyr Ile Pro Pro Ser Ile Lys Gly Gly Asn
           1540                1545                1550

Val Thr Thr Asp Ile Ser Val Leu Ile Asn Ser Leu Ile Lys Leu Glu
       1555                1560                1565

Cys Lys Thr Arg Gly Leu Pro Met Pro Ala Ile Thr Trp Tyr Lys Asp
   1570                1575                1580

Gly Gln Pro Ile Met Ser Ser Ser Gln Ala Leu Tyr Ile Asp Lys Gly
1585                1590                1595                1600

Gln Tyr Leu His Ile Pro Arg Ala Gln Val Ser Asp Ser Ala Thr Tyr
               1605                1610                1615

Thr Cys His Val Ala Asn Val Ala Gly Thr Ala Glu Lys Ser Phe His
           1620                1625                1630

Val Asp Val Tyr Val Pro Pro Met Ile Glu Gly Asn Leu Ala Thr Pro
       1635                1640                1645

Leu Asn Lys Gln Val Val Ile Ala His Ser Leu Thr Leu Glu Cys Asn
   1650                1655                1660

Ala Ala Gly Asn Pro Ser Pro Ile Leu Thr Trp Leu Lys Asp Gly Val
1665                1670                1675                1680

Pro Val Lys Ala Asn Asp Asn Phe Arg Ile Glu Ala Gly Gly Lys Lys
               1685                1690                1695

Leu Glu Ile Met Ser Ala Gln Glu Ile Asp Arg Gly Gln Tyr Ile Cys
           1700                1705                1710
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Val Ala Thr Ser Val Ala Gly Glu Lys Glu Ile Lys Tyr Glu Val Asp
       1715                1720                1725

Val Leu Val Pro Pro Ala Ile Glu Gly Gly Asp Glu Thr Ser Tyr Phe
   1730                1735                1740

Ile Val Met Val Asn Asn Leu Leu Glu Leu Asp Cys His Val Thr Gly
1745                1750                1755                1760

Ser Pro Pro Pro Thr Ile Met Trp Leu Lys Asp Gly Gln Leu Ile Asp
               1765                1770                1775

Glu Arg Asp Gly Phe Lys Ile Leu Leu Asn Gly Arg Lys Leu Val Ile
           1780                1785                1790

Ala Gln Ala Gln Val Ser Asn Thr Gly Leu Tyr Arg Cys Met Ala Ala
       1795                1800                1805

Asn Thr Ala Gly Asp His Lys Lys Glu Phe Glu Val Thr Val His Val
   1810                1815                1820

Pro Pro Thr Ile Lys Ser Ser Gly Leu Ser Glu Arg Val Val Val Lys
1825                1830                1835                1840

Tyr Lys Pro Val Ala Leu Gln Cys Ile Ala Asn Gly Ile Pro Asn Pro
               1845                1850                1855

Ser Ile Thr Trp Leu Lys Asp Asp Gln Pro Val Asn Thr Ala Gln Gly
           1860                1865                1870

Asn Leu Lys Ile Gln Ser Ser Gly Arg Val Leu Gln Ile Ala Lys Thr
       1875                1880                1885

Leu Leu Glu Asp Ala Gly Arg Tyr Thr Cys Val Ala Thr Asn Ala Ala
   1890                1895                1900

Gly Glu Thr Gln Gln His Ile Gln Leu His Val His Glu Pro Pro Ser
1905                1910                1915                1920

Leu Glu Asp Ala Gly Lys Met Leu Asn Glu Thr Val Leu Val Ser Asn
               1925                1930                1935

Pro Val Gln Leu Glu Cys Lys Ala Ala Gly Asn Pro Val Pro Val Ile
           1940                1945                1950

Thr Trp Tyr Lys Asp Asn Cys Leu Leu Ser Gly Ser Thr Ser Met Thr
       1955                1960                1965

Phe Leu Asn Arg Gly Gln Ile Ile Asp Ile Glu Ser Ala Gln Ile Ser
   1970                1975                1980

Asp Ala Gly Ile Tyr Lys Cys Val Ala Ile Asn Ser Ala Gly Ala Thr
1985                1990                1995                2000

Glu Leu Phe Tyr Ser Leu Gln Val His Val Ala Pro Ser Ile Ser Gly
               2005                2010                2015
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Ser Asn Asn Met Val Ala Val Val Val Asn Asn Pro Val Arg Leu Glu
           2020                2025                2030

Cys Glu Ala Arg Gly Ile Pro Ala Pro Ser Leu Thr Trp Leu Lys Asp
       2035                2040                2045

Gly Ser Pro Val Ser Ser Phe Ser Asn Gly Leu Gln Val Leu Ser Gly
   2050                2055                2060

Gly Arg Ile Leu Ala Leu Thr Ser Thr Gln Ile Ser Asp Thr Gly Arg
2065                2070                2075                2080

Tyr Thr Cys Val Ala Val Asn Ala Ala Gly Glu Lys Gln Arg Asp Ile
               2085                2090                2095

Asp Leu Arg Val Tyr Val Pro Pro Asn Ile Met Gly Glu Glu Gln Asn
           2100                2105                2110

Val Ser Val Leu Ile Ser Gln Ala Val Glu Leu Leu Cys Gln Ser Asp
       2115                2120                2125

Ala Ile Pro Pro Pro Thr Leu Thr Trp Leu Lys Asp Gly His Pro Leu
   2130                2135                2140

Leu Lys Lys Pro Gly Leu Ser Ile Ser Glu Asn Arg Ser Val Leu Lys
2145                2150                2155                2160

Ile Glu Asp Ala Gln Val Gln Asp Thr Gly Arg Tyr Thr Cys Glu Ala
               2165                2170                2175

Thr Asn Val Ala Gly Lys Thr Glu Lys Lys Asn Tyr Asn Val Asn Ile
           2180                2185                2190

Trp Val Pro Pro Asn Ile Gly Gly Ser Asp Glu Leu Thr Gln Leu Thr
       2195                2200                2205

Val Ile Glu Gly Asn Leu Ile Ser Leu Leu Cys Glu Ser Ser Gly Ile
   2210                2215                2220

Pro Pro Pro Asn Leu Ile Trp Lys Lys Lys Gly Ser Pro Val Leu Thr
2225                2230                2235                2240

Asp Ser Met Gly Arg Val Arg Ile Leu Ser Gly Gly Arg Gln Leu Gln
               2245                2250                2255

Ile Ser Ile Ala Glu Lys Ser Asp Ala Ala Leu Tyr Ser Cys Val Ala
           2260                2265                2270

Ser Asn Val Ala Gly Thr Ala Lys Lys Glu Tyr Asn Leu Gln Val Tyr
       2275                2280                2285

Ile Arg Pro Thr Ile Thr Asn Ser Gly Ser His Pro Thr Glu Ile Ile
   2290                2295                2300

Val Thr Arg Gly Lys Ser Ile Ser Leu Glu Cys Glu Val Gln Gly Ile
2305                2310                2315                2320
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```
Pro Pro Pro Thr Val Thr Trp Met Lys Asp Gly His Pro Leu Ile Lys
                2325                2330                2335

Ala Lys Gly Val Glu Ile Leu Asp Glu Gly His Ile Leu Gln Leu Lys
        2340                2345                2350

Asn Ile His Val Ser Asp Thr Gly Arg Tyr Val Cys Val Ala Val Asn
    2355                2360                2365

Val Ala Gly Met Thr Asp Lys Lys Tyr Asp Leu Ser Val His Ala Pro
2370                2375                2380

Pro Ser Ile Ile Gly Asn His Arg Ser Pro Glu Asn Ile Ser Val Val
2385                2390                2395                2400

Glu Lys Asn Ser Val Ser Leu Thr Cys Glu Ala Ser Gly Ile Pro Leu
                2405                2410                2415

Pro Ser Thr Thr Trp Phe Lys Asp Gly Trp Pro Val Ser Leu Ser Asn
        2420                2425                2430

Ser Val Arg Ile Leu Ser Gly Gly Arg Met Leu Arg Leu Met Gln Thr
    2435                2440                2445

Thr Met Glu Asp Ala Gly Gln Tyr Thr Cys Val Val Arg Asn Ala Ala
2450                2455                2460

Gly Glu Glu Arg Lys Ile Phe Gly Leu Ser Val Leu Val Pro Pro His
2465                2470                2475                2480

Ile Val Gly Glu Asn Thr Leu Glu Asp Val Lys Val Lys Glu Lys Gln
                2485                2490                2495

Ser Val Thr Leu Thr Cys Glu Val Thr Gly Asn Pro Val Pro Glu Ile
        2500                2505                2510

Thr Trp His Lys Asp Gly Gln Pro Leu Gln Glu Asp Glu Ala His His
    2515                2520                2525

Ile Ile Ser Gly Gly Arg Phe Leu Gln Ile Thr Asn Val Gln Val Pro
2530                2535                2540

His Thr Gly Arg Tyr Thr Cys Leu Ala Ser Ser Pro Ala Gly His Lys
2545                2550                2555                2560

Ser Arg Ser Phe Ser Leu Asn Val Phe Val Ser Pro Thr Ile Ala Gly
                2565                2570                2575

Val Gly Ser Asp Gly Asn Pro Glu Asp Val Thr Val Ile Leu Asn Ser
        2580                2585                2590

Pro Thr Ser Leu Val Cys Glu Ala Tyr Ser Tyr Pro Pro Ala Thr Ile
    2595                2600                2605

Thr Trp Phe Lys Asp Gly Thr Pro Leu Glu Ser Asn Arg Asn Ile Arg
2610                2615                2620
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```
Ile Leu Pro Gly Gly Arg Thr Leu Gln Ile Leu Asn Ala Gln Glu Asp
2625                2630                2635                2640

Asn Ala Gly Arg Tyr Ser Cys Val Ala Thr Asn Glu Ala Gly Glu Met
                2645                2650                2655

Ile Lys His Tyr Glu Val Lys Val Tyr Ile Pro Pro Ile Ile Asn Lys
            2660                2665                2670

Gly Asp Leu Trp Gly Pro Gly Leu Ser Pro Lys Glu Val Lys Ile Lys
        2675                2680                2685

Val Asn Asn Thr Leu Thr Leu Glu Cys Glu Ala Tyr Ala Ile Pro Ser
    2690                2695                2700

Ala Ser Leu Ser Trp Tyr Lys Asp Gly Gln Pro Leu Lys Ser Asp Asp
2705                2710                2715                2720

His Val Asn Ile Ala Ala Asn Gly His Thr Leu Gln Ile Lys Glu Ala
                2725                2730                2735

Gln Ile Ser Asp Thr Gly Arg Tyr Thr Cys Val Ala Ser Asn Ile Ala
            2740                2745                2750

Gly Glu Asp Glu Leu Asp Phe Asp Val Asn Ile Gln Val Pro Pro Ser
        2755                2760                2765

Phe Gln Lys Leu Trp Glu Ile Gly Asn Met Leu Asp Thr Gly Arg Asn
    2770                2775                2780

Gly Glu Ala Lys Asp Val Ile Ile Asn Asn Pro Ile Ser Leu Tyr Cys
2785                2790                2795                2800

Glu Thr Asn Ala Ala Pro Pro Pro Thr Leu Thr Trp Tyr Lys Asp Gly
                2805                2810                2815

His Pro Leu Thr Ser Ser Asp Lys Val Leu Ile Leu Pro Gly Gly Arg
            2820                2825                2830

Val Leu Gln Ile Pro Arg Ala Lys Val Glu Asp Ala Gly Arg Tyr Thr
        2835                2840                2845

Cys Val Ala Val Asn Glu Ala Gly Glu Asp Ser Leu Gln Tyr Asp Val
    2850                2855                2860

Arg Val Leu Val Pro Pro Ile Ile Glu Gly Ala Asn Ser Asp Leu Pro
2865                2870                2875                2880

Glu Glu Val Thr Val Leu Val Asn Lys Ser Ala Leu Ile Glu Cys Leu
                2885                2890                2895

Ser Ser Gly Ser Pro Ala Pro Arg Asn Ser Trp Gln Lys Asp Gly Gln
            2900                2905                2910

Pro Leu Leu Glu Asp Asp His His Lys Phe Leu Ser Asn Gly Arg Ile
        2915                2920                2925
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Leu Gln Ile Leu Asn Thr Gln Ile Thr Asp Ile Gly Arg Tyr Val Cys
   2930                2935                2940

Val Ala Glu Asn Thr Ala Gly Ser Ala Lys Lys Tyr Phe Asn Leu Asn
2945                2950                2955                2960

Val His Val Pro Pro Ser Val Ile Gly Pro Lys Ser Glu Asn Leu Thr
               2965                2970                2975

Val Val Val Asn Asn Phe Ile Ser Leu Thr Cys Glu Val Ser Gly Phe
           2980                2985                2990

Pro Pro Pro Asp Leu Ser Trp Leu Lys Asn Xaa Gln Pro Ile Lys Leu
       2995                3000                3005

Asn Thr Asn Thr Leu Ile Val Pro Gly Gly Arg Thr Leu Gln Ile Ile
   3010                3015                3020

Arg Ala Lys Val Ser Asp Gly Gly Glu Tyr Thr Cys Ile Ala Ile Asn
3025                3030                3035                3040

Xaa Ala Gly Glu Ser Lys Lys Lys Phe Ser Leu Thr Val Tyr Val Pro
               3045                3050                3055

Pro Ser Ile Lys Asp His Asp Ser Glu Ser Leu Ser Val Val Asn Val
           3060                3065                3070

Arg Glu Gly Thr Ser Val Ser Leu Glu Cys Glu Ser Asn Ala Val Pro
       3075                3080                3085

Pro Pro Val Ile Thr Trp Tyr Lys Asn Gly Arg Met Ile Thr Glu Ser
   3090                3095                3100

Thr His Val Glu Ile Leu Ala Asp Gly Gln Met Leu His Ile Lys Lys
3105                3110                3115                3120

Ala Glu Val Ser Asp Thr Gly Gln Tyr Val Cys Arg Ala Ile Asn Val
               3125                3130                3135

Ala Gly Arg Asp Asp Lys Asn Phe His Leu Asn Val Tyr Val Pro Pro
           3140                3145                3150

Ser Ile Glu Gly Pro Glu Arg Glu Val Ile Val Glu Thr Ile Ser Asn
       3155                3160                3165

Pro Val Thr Leu Thr Cys Asp Ala Thr Gly Ile Pro Pro Pro Thr Ile
   3170                3175                3180

Ala Trp Leu Lys Asn Tyr Lys Arg Ile Glu Asn Ser Asp Ser Leu Glu
3185                3190                3195                3200

Val Arg Ile Leu Ser Gly Gly Ser Lys Leu Gln Ile Ala Arg Ser Gln
               3205                3210                3215

His Ser Asp Ser Gly Asn Tyr Thr Cys Ile Ala Ser Asn Met Glu Gly
           3220                3225                3230
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Lys Ala Gln Lys Tyr Tyr Phe Leu Ser Ile Gln Val Pro Pro Ser Val
       3235                3240                3245

Ala Gly Ala Glu Ile Pro Ser Asp Val Ser Val Leu Leu Gly Glu Asn
   3250                3255                3260

Val Glu Leu Val Cys Asn Ala Asn Gly Ile Pro Thr Pro Leu Ile Gln
3265                3270                3275                3280

Trp Leu Lys Asp Gly Lys Pro Ile Ala Ser Gly Glu Thr Glu Arg Ile
            3285                3290                3295

Arg Val Ser Ala Asn Gly Ser Thr Leu Asn Ile Tyr Gly Ala Leu Thr
          3300                3305                3310

Ser Asp Thr Gly Lys Tyr Thr Cys Val Ala Thr Asn Pro Ala Gly Glu
       3315                3320                3325

Glu Asp Arg Ile Phe Asn Leu Asn Val Tyr Val Thr Pro Thr Ile Arg
   3330                3335                3340

Gly Asn Lys Asp Glu Ala Glu Lys Leu Met Thr Tyr Val Asp Thr Ser
3345                3350                3355                3360

Ile Asn Ile Glu Cys Arg Xaa Thr Gly Thr Pro Pro Pro Gln Ile Asn
               3365                3370                3375

Trp Leu Lys Asn Gly Leu Pro Leu Pro Leu Ser Ser His Ile Arg Leu
          3380                3385                3390

Leu Ala Ala Gly Gln Val Ile Arg Ile Val Arg Ala Gln Val Ser Asp
       3395                3400                3405

Val Ala Val Tyr Thr Cys Val Ala Ser Asn Arg Ala Gly Val Asp Asn
   3410                3415                3420

Lys His Tyr Asn Leu Gln Val Phe Ala Pro Pro Asn Met Asp Asn Ser
3425                3430                3435                3440

Met Gly Thr Glu Glu Ile Thr Val Leu Lys Gly Ser Ser Thr Ser Met
               3445                3450                3455

Ala Cys Ile Thr Asp Gly Thr Pro Ala Pro Ser Met Ala Trp Leu Arg
          3460                3465                3470

Asp Gly Gln Pro Leu Gly Leu Asp Ala His Leu Thr Val Ser Thr His
       3475                3480                3485

Gly Met Val Leu Gln Leu Leu Lys Ala Glu Thr Glu Asp Ser Gly Lys
   3490                3495                3500

Tyr Thr Cys Ile Ala Ser Asn Glu Ala Gly Glu Val Ser Lys His Phe
3505                3510                3515                3520

Ile Leu Lys Val Leu Glu Pro Pro His Ile Asn Gly Ser Glu Glu His
               3525                3530                3535
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Glu Glu Ile Ser Val Ile Val Asn Asn Pro Leu Glu Leu Thr Cys Ile
3540 3545 3550

Ala Ser Gly Ile Pro Ala Pro Lys Met Thr Trp Met Lys Asp Gly Arg
3555 3560 3565

Pro Leu Pro Gln Thr Asp Gln Val Gln Thr Leu Gly Gly Gly Glu Val
3570 3575 3580

Leu Arg Ile Ser Thr Ala Gln Val Glu Asp Thr Gly Arg Tyr Thr Cys
3585 3590 3595 3600

Leu Ala Ser Ser Pro Ala Gly Asp Asp Asp Lys Glu Tyr Leu Val Arg
3605 3610 3615

Val His Val Pro Pro Asn Ile Ala Gly Thr Asp Glu Pro Arg Asp Ile
3620 3625 3630

Thr Val Leu Arg Asn Arg Gln Val Thr Leu Glu Cys Lys Ser Asp Ala
3635 3640 3645

Val Pro Pro Pro Val Ile Thr Trp Leu Arg Asn Gly Glu Arg Leu Gln
3650 3655 3660

Ala Thr Pro Arg Val Arg Ile Leu Ser Gly Gly Arg Tyr Leu Gln Ile
3665 3670 3675 3680

Asn Asn Ala Asp Leu Gly Asp Thr Ala Asn Tyr Thr Cys Val Ala Ser
3685 3690 3695

Asn Ile Ala Gly Lys Thr Thr Arg Glu Phe Ile Leu Thr Val Asn Val
3700 3705 3710

Pro Pro Asn Ile Lys Gly Gly Pro Gln Ser Leu Val Ile Leu Leu Asn
3715 3720 3725

Lys Ser Thr Val Leu Glu Cys Ile Ala Glu Gly Val Pro Thr Pro Arg
3730 3735 3740

Ile Thr Trp Arg Lys Asp Gly Ala Val Leu Ala Gly Asn His Ala Arg
3745 3750 3755 3760

Tyr Ser Ile Leu Glu Asn Gly Phe Leu His Ile Gln Ser Ala His Val
3765 3770 3775

Thr Asp Thr Gly Arg Tyr Leu Cys Met Ala Thr Asn Ala Ala Gly Thr
3780 3785 3790

Asp Arg Arg Arg Ile Asp Leu Gln Val His Val Pro Pro Ser Ile Ala
3795 3800 3805

Pro Gly Pro Thr Asn Met Thr Val Ile Val Asn Val Gln Thr Thr Leu
3810 3815 3820

Ala Cys Glu Ala Thr Gly Ile Pro Lys Pro Ser Ile Asn Trp Arg Lys
3825 3830 3835 3840

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Asn Gly His Leu Leu Asn Val Asp Gln Asn Gln Asn Ser Tyr Arg Leu
                3845                3850                3855

Leu Ser Ser Gly Ser Leu Val Ile Ile Ser Pro Ser Val Asp Asp Thr
            3860                3865                3870

Ala Thr Tyr Glu Cys Thr Val Thr Asn Gly Ala Gly Asp Asp Lys Arg
        3875                3880                3885

Thr Val Asp Leu Thr Val Gln Val Pro Pro Ser Ile Ala Asp Glu Pro
    3890                3895                3900

Thr Asp Phe Leu Val Thr Lys His Ala Pro Ala Val Ile Thr Cys Thr
3905                3910                3915                3920

Ala Ser Gly Val Pro Phe Pro Ser Ile His Trp Thr Lys Asn Gly Ile
                3925                3930                3935

Arg Leu Leu Pro Arg Gly Asp Gly Tyr Arg Ile Leu Ser Ser Gly Ala
            3940                3945                3950

Ile Glu Ile Leu Ala Thr Gln Leu Asn His Ala Gly Arg Tyr Thr Cys
        3955                3960                3965

Val Ala Arg Asn Ala Ala Gly Ser Ala His Arg His Val Thr Leu His
    3970                3975                3980

Val His Glu Pro Pro Val Ile Gln Pro Gln Pro Ser Glu Leu His Val
3985                3990                3995                4000

Ile Leu Asn Asn Pro Ile Leu Leu Pro Cys Glu Ala Thr Gly Thr Pro
                4005                4010                4015

Ser Pro Phe Ile Thr Trp Gln Lys Glu Gly Ile Asn Val Asn Thr Ser
            4020                4025                4030

Gly Arg Asn His Ala Val Leu Pro Ser Gly Gly Leu Gln Ile Ser Arg
        4035                4040                4045

Ala Val Arg Glu Asp Ala Gly Thr Tyr Met Cys Val Ala Gln Asn Pro
    4050                4055                4060

Ala Gly Thr Ala Leu Gly Lys Ile Lys Leu Asn Val Gln Val Pro Pro
4065                4070                4075                4080

Val Ile Ser Pro His Leu Lys Glu Tyr Val Ile Ala Val Asp Lys Pro
                4085                4090                4095

Ile Thr Leu Ser Cys Glu Ala Asp Gly Leu Pro Pro Pro Asp Ile Thr
            4100                4105                4110

Trp His Lys Asp Gly Arg Ala Ile Val Glu Ser Ile Arg Gln Arg Val
        4115                4120                4125

Leu Ser Ser Gly Ser Leu Gln Ile Ala Phe Val Gln Pro Gly Asp Ala
    4130                4135                4140
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Gly His Tyr Thr Cys Met Ala Ala Asn Val Ala Gly Ser Ser Ser Thr
4145                4150                4155                4160

Ser Thr Lys Leu Thr Val His Val Pro Pro Arg Ile Arg Ser Thr Glu
                4165                4170                4175

Gly His Tyr Thr Val Asn Glu Asn Ser Gln Ala Ile Leu Pro Cys Val
            4180                4185                4190

Ala Asp Gly Ile Pro Thr Pro Ala Ile Asn Trp Lys Lys Asp Asn Val
        4195                4200                4205

Leu Leu Ala Asn Leu Leu Gly Lys Tyr Thr Ala Glu Pro Tyr Gly Glu
    4210                4215                4220

Leu Ile Leu Glu Asn Val Val Leu Glu Asp Ser Gly Phe Tyr Thr Cys
4225                4230                4235                4240

Val Ala Asn Asn Ala Ala Gly Glu Asp Thr His Thr Val Ser Leu Thr
                4245                4250                4255

Val His Val Leu Pro Thr Phe Thr Glu Leu Pro Gly Asp Val Ser Leu
            4260                4265                4270

Asn Lys Gly Glu Gln Leu Arg Leu Ser Cys Lys Ala Thr Gly Ile Pro
        4275                4280                4285

Leu Pro Lys Leu Thr Trp Thr Phe Asn Asn Asn Ile Ile Pro Ala His
    4290                4295                4300

Phe Asp Ser Val Asn Gly His Ser Glu Leu Val Ile Glu Arg Val Ser
4305                4310                4315                4320

Lys Glu Asp Ser Gly Thr Tyr Val Cys Thr Ala Glu Asn Ser Val Gly
                4325                4330                4335

Phe Val Lys Ala Thr Gly Phe Val Tyr Val Lys Glu Pro Pro Val Phe
            4340                4345                4350

Lys Gly Asp Tyr Pro Ser Asn Trp Ile Glu Pro Leu Gly Gly Asn Ala
        4355                4360                4365

Ile Leu Asn Cys Glu Val Lys Gly Asp Pro Thr Pro Thr Ile Gln Trp
    4370                4375                4380

Asn Arg Lys Gly Val Asp Ile Glu Ile Ser His Arg Ile Arg Gln Leu
4385                4390                4395                4400

Gly Asn Gly Ser Leu Ala Ile Tyr Gly Thr Val Asn Glu Asp Ala Gly
                4405                4410                4415

Asp Tyr Thr Cys Val Ala Thr Asn Glu Ala Gly Val Val Glu Arg Ser
            4420                4425                4430

Met Ser Leu Thr Leu Gln Ser Pro Pro Ile Ile Thr Leu Glu Pro Val
        4435                4440                4445
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Glu Thr Val Ile Asn Ala Gly Gly Lys Ile Ile Leu Asn Cys Gln Ala
   4450                4455                4460

Thr Gly Glu Pro Gln Pro Thr Ile Thr Trp Ser Arg Gln Gly His Ser
4465                4470                4475                4480

Ile Ser Trp Asp Asp Arg Val Asn Val Leu Ser Asn Asn Ser Leu Tyr
               4485                4490                4495

Ile Ala Asp Ala Gln Lys Glu Asp Thr Ser Glu Phe Glu Cys Val Ala
           4500                4505                4510

Arg Asn Leu Met Gly Ser Val Leu Val Arg Val Pro Val Ile Val Gln
       4515                4520                4525

Val His Gly Gly Phe Ser Gln Trp Ser Ala Trp Arg Ala Cys Ser Val
   4530                4535                4540

Thr Cys Gly Lys Gly Ile Gln Lys Arg Ser Arg Leu Cys Asn Gln Pro
4545                4550                4555                4560

Leu Pro Ala Asn Gly Gly Lys Pro Cys Gln Gly Ser Asp Leu Glu Met
               4565                4570                4575

Arg Asn Cys Gln Asn Lys Pro Cys Pro Val Asp Gly Ser Trp Ser Glu
           4580                4585                4590

Trp Ser Leu Trp Glu Glu Cys Thr Arg Ser Cys Gly Arg Gly Asn Gln
       4595                4600                4605

Thr Arg Thr Arg Thr Cys Asn Asn Pro Ser Val Gln His Gly Gly Arg
   4610                4615                4620

Pro Cys Glu Gly Asn Ala Val Glu Ile Ile Met Cys Asn Ile Arg Pro
4625                4630                4635                4640

Cys Pro Val His Gly Ala Trp Ser Ala Trp Gln Pro Trp Gly Thr Cys
               4645                4650                4655

Ser Glu Ser Cys Gly Lys Gly Thr Gln Thr Arg Ala Arg Leu Cys Asn
           4660                4665                4670

Asn Pro Pro Pro Ala Phe Gly Gly Ser Tyr Cys Asp Gly Ala Glu Thr
       4675                4680                4685

Gln Met Gln Val Cys Asn Glu Arg Asn Cys Pro Ile His Gly Lys Trp
   4690                4695                4700

Ala Thr Trp Ala Ser Trp Ser Ala Cys Ser Val Ser Cys Gly Gly Gly
4705                4710                4715                4720

Ala Arg Gln Arg Thr Arg Gly Cys Ser Asp Pro Val Pro Gln Tyr Gly
               4725                4730                4735

Gly Arg Lys Cys Glu Gly Ser Asp Val Gln Ser Asp Phe Cys Asn Ser
           4740                4745                4750
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Asp Pro Cys Pro Thr His Gly Asn Trp Ser Pro Trp Ser Gly Trp Gly
       4755                4760                4765

Thr Cys Ser Arg Thr Cys Asn Gly Gly Gln Met Arg Arg Tyr Arg Thr
   4770                4775                4780

Cys Asp Asn Pro Pro Pro Ser Asn Gly Gly Arg Ala Cys Gly Gly Pro
4785                4790                4795                4800

Asp Ser Gln Ile Gln Arg Cys Asn Thr Asp Met Cys Pro Val Asp Gly
               4805                4810                4815

Ser Trp Gly Ser Trp His Ser Trp Ser Gln Cys Ser Ala Ser Cys Gly
           4820                4825                4830

Gly Gly Glu Lys Thr Arg Lys Arg Leu Cys Asp His Pro Val Pro Val
       4835                4840                4845

Lys Gly Gly Arg Pro Cys Pro Gly Asp Thr Thr Gln Val Thr Arg Cys
   4850                4855                4860

Asn Val Gln Ala Cys Pro Gly Gly Pro Gln Arg Ala Arg Gly Ser Val
4865                4870                4875                4880

Ile Gly Asn Ile Asn Asp Val Glu Phe Gly Ile Ala Phe Leu Asn Ala
               4885                4890                4895

Thr Ile Thr Asp Ser Pro Asn Ser Asp Thr Arg Ile Ile Arg Ala Lys
           4900                4905                4910

Ile Thr Asn Val Pro Arg Ser Leu Gly Ser Ala Met Arg Lys Ile Val
       4915                4920                4925

Ser Ile Leu Asn Pro Ile Tyr Trp Thr Thr Ala Lys Glu Ile Gly Glu
   4930                4935                4940

Ala Val Asn Gly Phe Thr Leu Thr Asn Ala Val Phe Lys Arg Glu Thr
4945                4950                4955                4960

Gln Val Glu Phe Ala Thr Gly Glu Ile Leu Gln Met Ser His Ile Ala
               4965                4970                4975

Arg Gly Leu Asp Ser Asp Gly Ser Leu Leu Leu Asp Ile Val Val Ser
           4980                4985                4990

Gly Tyr Val Leu Gln Leu Gln Ser Pro Ala Glu Val Thr Val Lys Asp
       4995                5000                5005

Tyr Thr Glu Asp Tyr Ile Gln Thr Gly Pro Gly Gln Leu Tyr Ala Tyr
   5010                5015                5020

Ser Thr Arg Leu Phe Thr Ile Asp Gly Ile Ser Ile Pro Tyr Thr Trp
5025                5030                5035                5040

Asn His Thr Val Phe Tyr Asp Gln Ala Gln Gly Arg Met Pro Phe Leu
               5045                5050                5055
```

```
Val Glu Thr Leu His Ala Ser Ser Val Glu Ser Asp Tyr Asn Gln Ile
            5060                5065                5070

Glu Glu Thr Leu Gly Phe Lys Ile His Ala Ser Ile Ser Lys Gly Asp
        5075                5080                5085

Arg Ser Asn Gln Cys Pro Ser Gly Phe Thr Leu Asp Ser Val Gly Pro
    5090                5095                5100

Phe Cys Ala Asp Glu Asp Glu Cys Ala Ala Gly Asn Pro Cys Ser His
5105                5110                5115                5120

Ser Cys His Asn Ala Met Gly Thr Tyr Tyr Cys Ser Cys Pro Lys Gly
                5125                5130                5135

Leu Thr Ile Ala Ala Asp Gly Arg Thr Cys Gln Asp Ile Asp Glu Cys
            5140                5145                5150

Ala Leu Gly Arg His Thr Cys His Ala Gly Gln Asp Cys Asp Asn Thr
        5155                5160                5165

Ile Gly Ser Tyr Arg Cys Val Val Arg Cys Gly Ser Gly Phe Arg Arg
    5170                5175                5180

Thr Ser Asp Gly Leu Ser Cys Gln Asp Ile Asn Glu Cys Gln Glu Ser
5185                5190                5195                5200

Ser Pro Cys His Gln Arg Cys Phe Asn Ala Ile Gly Ser Phe His Cys
                5205                5210                5215

Gly Cys Glu Pro Gly Tyr Gln Leu Lys Gly Arg Lys Cys Met Asp Val
            5220                5225                5230

Asn Glu Cys Arg Gln Asn Val Cys Arg Pro Asp Gln His Cys Lys Asn
        5235                5240                5245

Thr Arg Gly Gly Tyr Lys Cys Ile Asp Leu Cys Pro Asn Gly Met Thr
    5250                5255                5260

Lys Ala Glu Asn Gly Thr Cys Ile Asp Ile Asp Glu Cys Lys Asp Gly
5265                5270                5275                5280

Thr His Gln Cys Arg Tyr Asn Gln Ile Cys Glu Asn Thr Arg Ser Ser
                5285                5290                5295

Tyr Arg Cys Val Cys Pro Arg Gly Tyr Arg Ser Gln Gly Val Gly Arg
            5300                5305                5310

Pro Cys Met Asp Ile Asp Glu Cys Glu Gln Val Pro Lys Pro Cys Ala
        5315                5320                5325

His Gln Cys Ser Asn Thr Pro Gly Ser Phe Lys Cys Ile Cys Pro Pro
    5330                5335                5340

Gly Gln His Leu Leu Gly Asp Gly Lys Ser Cys Ala Gly Leu Glu Arg
5345                5350                5355                5360
```

```
Leu Pro Asn Tyr Gly Thr Gln Tyr Ser Ser Tyr Asn Leu Ala Arg Phe
                5365                5370                5375

Ser Pro Val Arg Asn Asn Tyr Gln Pro Gln Gln His Tyr Arg Gln Tyr
            5380                5385                5390

Ser His Leu Tyr Ser Ser Tyr Ser Glu Tyr Arg Asn Ser Arg Thr Ser
        5395                5400                5405

Leu Ser Arg Thr Arg Arg Thr Ile Arg Lys Thr Cys Pro Glu Gly Ser
    5410                5415                5420

Glu Ala Ser His Asp Thr Cys Val Asp Ile Asp Glu Cys Glu Asn Thr
5425                5430                5435                5440

Asp Ala Cys Gln His Glu Cys Lys Asn Thr Phe Gly Ser Tyr Gln Cys
                5445                5450                5455

Ile Cys Pro Pro Gly Tyr Gln Leu Thr His Asn Gly Lys Thr Cys Gln
            5460                5465                5470

Asp Ile Asp Glu Cys Leu Glu Gln Asn Val His Cys Gly Pro Asn Arg
        5475                5480                5485

Met Cys Phe Asn Met Arg Gly Ser Tyr Gln Cys Ile Asp Thr Pro Cys
    5490                5495                5500

Pro Pro Asn Tyr Gln Arg Asp Pro Val Ser Gly Phe Cys Leu Lys Asn
5505                5510                5515                5520

Cys Pro Pro Asn Asp Leu Glu Cys Ala Leu Ser Pro Tyr Ala Leu Glu
                5525                5530                5535

Tyr Lys Leu Val Ser Leu Pro Phe Gly Ile Ala Thr Asn Gln Asp Leu
            5540                5545                5550

Ile Arg Leu Val Ala Tyr Thr Gln Asp Gly Val Met His Pro Arg Thr
        5555                5560                5565

Thr Phe Leu Met Val Asp Glu Glu Gln Thr Val Pro Phe Ala Leu Arg
    5570                5575                5580

Asp Glu Asn Leu Lys Gly Val Val Tyr Thr Thr Arg Pro Leu Arg Glu
5585                5590                5595                5600

Ala Glu Thr Tyr Arg Met Arg Val Arg Ala Ser Ser Tyr Ser Ala Asn
                5605                5610                5615

Gly Thr Ile Glu Tyr Gln Thr Thr Phe Ile Val Tyr Ile Ala Val Ser
            5620                5625                5630

Ala Tyr Pro Tyr
        5635


<210> 94
<211> 63
```

<212> PRT
<213> Homo sapiens

<400> 94
Leu Glu Gly Glu Ser Val Thr Leu Thr Cys Pro Ala Ser Gly Asp Pro
1 5 10 15

Val Pro Asn Ile Thr Trp Leu Lys Asp Gly Lys Pro Leu Pro Glu Ser
20 25 30

Arg Val Val Ala Ser Gly Ser Thr Leu Thr Ile Lys Asn Val Ser Leu
35 40 45

Glu Asp Ser Gly Leu Tyr Thr Cys Val Ala Arg Asn Ser Val Gly
50 55 60

<210> 95
<211> 81
<212> PRT
<213> Homo sapiens

<400> 95
Val Lys Glu Gly Glu Ser Val Thr Leu Ser Cys Glu Ala Ser Gly Asn
1 5 10 15

Pro Pro Pro Thr Val Thr Trp Tyr Lys Gln Gly Gly Lys Leu Leu Ala
20 25 30

Glu Ser Gly Arg Phe Ser Val Ser Arg Ser Gly Gly Asn Ser Thr Leu
35 40 45

Thr Ile Ser Asn Val Thr Pro Glu Asp Ser Gly Thr Tyr Thr Cys Ala
50 55 60

Ala Thr Asn Ser Ser Gly Ser Ala Ser Ser Gly Thr Thr Leu Thr Val
65 70 75 80

Leu

<210> 96
<211> 629
<212> PRT
<213> Mus musculus

<400> 96
Gln Ala Ala Arg Gly Arg Thr Arg Lys Gly Lys Tyr Cys Leu Gln Leu
1 5 10 15

Ser Pro Phe Ile Leu Trp Phe Leu Arg Leu Asp Asn Leu Ile Phe His
20 25 30

Pro Glu Lys Ala Glu Val Leu Ala Val Leu Asp Trp Glu Leu Ser Thr
35 40 45

```
Leu Gly Asp Pro Phe Ala Asp Val Ala Tyr Ser Cys Leu Ala Tyr Tyr
     50                  55                  60

Leu Pro Ser Ser Phe Pro Ile Leu Arg Gly Phe Arg Asp Gln Asp Val
 65                  70                  75                  80

Thr Lys Leu Gly Ile Pro Thr Val Glu Glu Tyr Phe Arg Met Tyr Cys
                 85                  90                  95

Leu Asn Met Gly Ile Pro Pro Ile Asp Asn Trp Asn Phe Tyr Met Ala
            100                 105                 110

Phe Ser Phe Phe Arg Val Ala Ala Ile Leu Gln Gly Val Tyr Lys Arg
        115                 120                 125

Ser Leu Thr Gly Gln Ala Ser Ser Ala Thr Ala Gln Gln Ser Gly Lys
    130                 135                 140

Leu Thr Glu Ser Met Ala Glu Leu Ala Trp Asp Phe Ala Thr Lys Glu
145                 150                 155                 160

Gly Phe Arg Val Phe Lys Glu Met Pro Ala Thr Lys Thr Leu Ser Arg
                165                 170                 175

Ser Tyr His Ala Trp Ala Gly Pro Arg Ser Pro Arg Thr Pro Lys Gly
            180                 185                 190

Val Arg Gly His Ser Thr Val Ala Ala Ala Ser Pro Ser His Glu Ala
        195                 200                 205

Lys Gly Gly Leu Val Ile Ser Pro Glu Gly Leu Ser Pro Ala Val Arg
    210                 215                 220

Lys Leu Tyr Glu Gln Leu Val Gln Phe Ile Glu Gln Lys Val Tyr Pro
225                 230                 235                 240

Leu Glu Pro Glu Leu Gln Arg His Gln Ala Ser Ala Asp Arg Trp Ser
                245                 250                 255

Pro Ser Pro Leu Ile Glu Asp Leu Lys Glu Lys Ala Lys Ala Glu Gly
            260                 265                 270

Leu Trp Asn Leu Phe Leu Pro Leu Glu Thr Asp Pro Glu Lys Lys Tyr
        275                 280                 285

Gly Ala Gly Leu Thr Asn Val Glu Tyr Ala His Leu Cys Glu Val Met
    290                 295                 300

Gly Met Ser Leu Tyr Ala Ser Glu Ile Phe Asn Cys Ser Ala Pro Asp
305                 310                 315                 320

Thr Gly Asn Met Glu Ile Leu Val Arg Tyr Gly Thr Glu Glu Gln Lys
                325                 330                 335

Ala Arg Trp Leu Val Pro Leu Leu Glu Gly Arg Ile Arg Ser Cys Phe
            340                 345                 350
```

```
Ala Met Thr Glu Pro Gln Val Ala Ser Ser Asp Ala Ser Asn Ile Glu
        355                 360                 365

Ala Ser Ile Lys Glu Glu Asp Gly Cys Tyr Val Ile Asn Gly His Lys
    370                 375                 380

Trp Trp Thr Ser Gly Ile Leu Asp Pro Arg Cys Lys Leu Cys Val Phe
385                 390                 395                 400

Met Gly Lys Thr Asp Pro Gln Ala Pro Arg His Gln Gln Gln Ser Met
                405                 410                 415

Leu Leu Val Pro Met Asp Ser Pro Gly Ile Thr Val Ile Arg Pro Leu
            420                 425                 430

Ser Val Phe Gly Leu Glu Asp Pro Pro Gly Gly His Gly Glu Val Arg
        435                 440                 445

Phe Lys Asp Val Arg Val Pro Lys Glu Asn Ile Leu Leu Gly Pro Gly
    450                 455                 460

Arg Gly Phe Glu Ile Ala Gln Gly Arg Leu Gly Pro Gly Arg Ile His
465                 470                 475                 480

His Cys Met Arg Leu Ile Gly Tyr Ser Glu Arg Ala Leu Ala Leu Met
                485                 490                 495

Lys Thr Arg Val Met Ser Arg Thr Ala Phe Gly Lys Pro Leu Val Glu
            500                 505                 510

Gln Gly Thr Ile Leu Ala Asp Ile Ala Arg Ser Arg Val Glu Ile Glu
        515                 520                 525

Gln Ala Arg Leu Leu Val Leu Lys Ala Ala His Leu Met Asp Val Ala
    530                 535                 540

Gly Asn Lys Thr Ala Ala Leu Asp Ile Ala Met Ile Lys Met Val Val
545                 550                 555                 560

Pro Ser Met Ala Tyr His Val Ile Asp Arg Ala Ile Gln Ala Phe Gly
                565                 570                 575

Ala Ala Gly Leu Ser Ser Asp Tyr Pro Leu Ala Gln Phe Phe Gly Trp
            580                 585                 590

Ala Arg Ala Leu Arg Phe Ala Asp Gly Pro Asp Glu Val His Gln Leu
        595                 600                 605

Thr Val Ala Lys Met Glu Leu Lys Asn Gln Ser Arg Met Gln Glu Pro
    610                 615                 620

Ala Val Pro Arg Val
625
```

<210> 97
<211> 455

<212> PRT
<213> Mus musculus

<400> 97

```
Met Glu Gln Arg Val Tyr Pro Ala Glu Pro Glu Leu Gln Ser His Gln
  1               5                  10                  15

Ala Ser Ala Ala Arg Trp Ser Pro Ser Pro Leu Ile Glu Asp Leu Lys
             20                  25                  30

Glu Lys Ala Lys Ala Glu Gly Leu Trp Asn Leu Phe Leu Pro Leu Glu
         35                  40                  45

Ala Asp Pro Glu Lys Lys Tyr Gly Ala Gly Leu Thr Asn Val Glu Tyr
     50                  55                  60

Ala His Leu Cys Glu Leu Met Gly Thr Ser Leu Tyr Ala Pro Glu Val
 65                  70                  75                  80

Cys Asn Cys Ser Ala Pro Asp Thr Gly Asn Met Glu Leu Leu Val Arg
                 85                  90                  95

Tyr Gly Thr Glu Ala Gln Lys Ala Arg Trp Leu Ile Pro Leu Leu Glu
            100                 105                 110

Gly Lys Ala Arg Ser Cys Phe Ala Met Thr Glu Pro Gln Val Ala Ser
        115                 120                 125

Ser Asp Ala Thr Asn Ile Glu Ala Ser Ile Arg Glu Glu Asp Ser Phe
    130                 135                 140

Tyr Val Ile Asn Gly His Lys Trp Trp Ile Thr Gly Ile Leu Asp Pro
145                 150                 155                 160

Arg Cys Gln Leu Cys Val Phe Met Gly Lys Thr Asp Pro His Ala Pro
                165                 170                 175

Arg His Arg Gln Gln Ser Val Leu Leu Val Pro Met Asp Thr Pro Gly
            180                 185                 190

Ile Lys Ile Ile Arg Pro Leu Thr Val Tyr Gly Leu Glu Asp Ala Pro
        195                 200                 205

Gly Gly His Gly Glu Val Arg Phe Glu His Val Arg Val Pro Lys Glu
    210                 215                 220

Asn Met Val Leu Gly Pro Gly Arg Gly Phe Glu Ile Ala Gln Gly Arg
225                 230                 235                 240

Leu Gly Pro Gly Arg Ile His His Cys Met Arg Leu Ile Gly Phe Ser
                245                 250                 255

Glu Arg Ala Leu Ala Leu Met Lys Ala Arg Val Lys Ser Arg Leu Ala
            260                 265                 270

Phe Gly Lys Pro Leu Val Glu Gln Gly Thr Val Leu Ala Asp Ile Ala
        275                 280                 285
```

```
Gln Ser Arg Val Glu Ile Glu Gln Ala Arg Leu Leu Val Leu Arg Ala
    290                 295                 300

Ala His Leu Met Asp Leu Ala Gly Asn Lys Ala Ala Ala Leu Asp Ile
305                 310                 315                 320

Ala Met Ile Lys Met Val Ala Pro Ser Met Ala Ser Arg Val Ile Asp
                325                 330                 335

Arg Ala Ile Gln Lys Thr Ser Leu Gln Glu Ala Trp Ser Leu Phe Gln
            340                 345                 350

Ala Arg Arg Arg Gly Phe Ala Glu Gly Gln Gly Gly Ser Gly Thr Glu
        355                 360                 365

Ser Gly Lys Leu Val Phe Arg Leu Ser Val Pro Gly Trp Ala Gly Thr
    370                 375                 380

Val Thr Ser Leu Gln Pro Phe Ser Pro Ser Leu Ser Ala Cys Gly Asn
385                 390                 395                 400

Leu Asp Thr Phe Trp Glu Ala Ser Gln Gly Cys Gly Thr Cys Leu Leu
                405                 410                 415

Trp Gln Leu Gln Gly Ser Cys Leu Ala Ser Leu Val Ser Arg Gly Ala
            420                 425                 430

Ala Thr Ala Gly Gly Gly Leu Glu Thr Gln Asp Leu Gly Ala Trp Glu
        435                 440                 445

Asn Gly Met Gln Pro Thr Leu
    450                 455


<210> 98
<211> 415
<212> PRT
<213> Deinococcus radiodurans

<400> 98
Met Thr Met Phe Asp Thr Thr Pro Arg Ala Gln Asp Leu Arg Glu Arg
  1               5                  10                  15

Leu Leu Arg Phe Met Asp Thr Tyr Ile Tyr Pro Asn Glu Ala Glu Phe
             20                  25                  30

His Arg Gln Val Glu Ser Gly Glu Arg Trp Ala Pro Val Glu Leu Ile
         35                  40                  45

Glu Glu Leu Lys Pro Lys Ala Arg Ala Glu Gly Leu Trp Asn Leu Phe
     50                  55                  60

Leu Pro Pro Ala Ser Asp Pro Glu Gly Lys Phe Gly Ala Gly Leu Thr
 65                  70                  75                  80

Asn Leu Glu Tyr Ala Gly Leu Cys Glu Ile Met Gly Arg Val Trp Trp
```

```
                  85                  90                  95

Ala Pro Glu Val Phe Asn Cys Asn Ala Pro Asp Thr Gly Asn Met Glu
            100                 105                 110

Val Ile Ala Arg Tyr Gly Thr Pro Glu Gln Gln Glu Gln Trp Leu Leu
        115                 120                 125

Pro Leu Leu Asn Gly Glu Ile Arg Ser Ala Phe Ser Met Thr Glu Pro
    130                 135                 140

Gln Val Ala Ser Ser Asp Ala Thr Asn Ile Glu Ala Gln Ile Val Arg
145                 150                 155                 160

Asp Gly Asp Glu Tyr Val Ile Asn Gly Arg Lys Trp Trp Ser Ser Gly
                165                 170                 175

Ala Gly Asp Ser Arg Cys Lys Val Ser Ile Phe Met Gly Lys Thr Asp
            180                 185                 190

Pro Gln Ala Pro Arg His Leu Gln Gln Ser Met Ile Leu Val Pro Phe
        195                 200                 205

Asp Ala Pro Gly Val Lys Ile Glu Arg Ala Leu Gln Val Phe Gly Phe
    210                 215                 220

Asp Asp Ala Pro His Gly His Met Glu Met Ser Phe Asp Asn Val Arg
225                 230                 235                 240

Val Pro Val Thr Asn Met Leu Leu Gly Glu Gly Arg Gly Phe Glu Ile
                245                 250                 255

Ala Gln Gly Arg Leu Gly Pro Gly Arg Ile His His Cys Met Arg Leu
            260                 265                 270

Val Gly Gln Ala Glu Arg Ala Leu Glu Leu Met Ile Glu Arg Ser Ala
        275                 280                 285

Gln Arg Ile Ala Phe Gly Lys Pro Leu Ala Leu His Gln His Thr Arg
    290                 295                 300

Glu Leu Ile Ala Gln Ser Arg Met Glu Ile Asp Gln Ala Arg Leu Leu
305                 310                 315                 320

Thr Leu Lys Ala Ala His Thr Met Asp Thr Val Gly Asn Lys Asp Ala
                325                 330                 335

Lys Gly Glu Ile Ala Ala Ile Lys Val Val Ala Pro Asn Met Ala Leu
            340                 345                 350

Arg Val Ile Asp Arg Ala Ile Gln Val Tyr Gly Gly Ala Gly Val Cys
        355                 360                 365

Gln Asp Thr Pro Leu Ala Met Met Tyr Ala Gln Ala Arg Thr Leu Arg
    370                 375                 380

Leu Ala Asp Gly Pro Asp Ile Val His Thr Glu Thr Val Ala Lys Glu
```

385 390 395 400

Glu Leu Arg Arg Gln Gly Val Asp Leu Arg Ala Leu Ser Lys Arg
405 410 415

<210> 99
<211> 409
<212> PRT
<213> Pseudomonas aeruginosa

<400> 99
Met Asp Phe Ala Tyr Ser Pro Lys Val Gln Glu Leu Arg Glu Arg Val
1 5 10 15

Ser Ala Phe Met Glu Ala His Val Tyr Pro Ala Glu Ala Val Phe Glu
20 25 30

Arg Gln Val Ala Glu Gly Asp Arg Trp Gln Pro Thr Ala Ile Met Glu
35 40 45

Glu Leu Lys Ala Lys Ala Lys Ala Glu Gly Leu Trp Asn Leu Phe Leu
50 55 60

Pro Glu Ser Glu Tyr Gly Ala Gly Leu Ala Asn His Glu Tyr Ala Pro
65 70 75 80

Leu Ala Glu Ile Met Gly Arg Ser Leu Ile Gly Pro Glu Pro Phe Asn
85 90 95

Cys Ala Ala Pro Asp Thr Gly Asn Met Glu Val Leu Val Arg Tyr Gly
100 105 110

Ser Glu Glu Gln Lys Arg Thr Trp Leu Glu Pro Leu Leu Ser Gly Glu
115 120 125

Ile Arg Ser Ala Phe Ala Met Thr Glu Pro Gly Val Ala Ser Ser Asp
130 135 140

Ala Thr Asn Met Glu Ala Arg Ala Glu Arg Gln Gly Asp Asp Trp Val
145 150 155 160

Ile Asn Gly Arg Lys Trp Trp Thr Ser Gly Ala Cys Asp Pro Arg Cys
165 170 175

Lys Ile Leu Ile Phe Met Gly Leu Thr Asn Pro Asp Ala Pro Arg His
180 185 190

Gln Gln His Ser Met Ile Leu Val Pro Val Asp Thr Pro Gly Val Lys
195 200 205

Ile Leu Arg Pro Leu Pro Val Phe Gly Tyr Asp Asp Ala Pro His Gly
210 215 220

His Ala Glu Val Leu Phe Glu Asn Val Arg Val Pro Tyr Glu Asn Val
225 230 235 240

```
Ile Leu Gly Glu Gly Arg Gly Phe Glu Ile Ala Gln Gly Arg Leu Gly
                245                 250                 255

Pro Gly Arg Ile His His Cys Met Arg Ser Ile Gly Met Ala Glu Arg
            260                 265                 270

Ala Leu Glu Leu Met Cys Lys Arg Ala Val Ser Arg Thr Ala Phe Gly
        275                 280                 285

Lys Pro Leu Ala Arg Leu Gly Gly Asn Ile Asp His Ile Ala Asp Ser
    290                 295                 300

Arg Met Glu Ile Asn Met Ala Arg Leu Leu Thr Leu Gln Ala Ala Tyr
305                 310                 315                 320

Met Met Asp Thr Val Gly Asn Lys Ile Ala Gln Ser Glu Ile Ala Gln
                325                 330                 335

Ile Lys Val Val Ala Pro Asn Val Ala Leu Lys Val Ile Asp Arg Ala
            340                 345                 350

Ile Gln Met His Gly Gly Ala Gly Val Ser Asn Asp Phe Pro Leu Ala
        355                 360                 365

Tyr Trp Tyr Ala Met Gln Arg Thr Leu Arg Leu Ala Asp Gly Pro Asp
    370                 375                 380

Glu Val His Arg Ala Ala Ile Gly Lys Phe Glu Leu Gly Lys Tyr Val
385                 390                 395                 400

Pro Arg Glu Met Leu Arg Ser Ser Arg
                405
```

<210> 100
<211> 423
<212> PRT
<213> Arabidopsis thaliana

<400> 100

```
Met Asp Ala Val Gln Arg Asp Val Ser Pro Ser Tyr Glu Ser Leu Val
  1                 5                  10                  15

Asp Gly Ser Gly Arg Phe Ile Pro Asn Arg Lys Val Leu Glu Leu Arg
            20                  25                  30

Gln Lys Leu Ile Lys Phe Met Glu Thr His Ile Tyr Pro Met Glu Asn
        35                  40                  45

Glu Phe Ser Lys Leu Ala Gln Ser Asp Met Arg Trp Thr Val His Pro
    50                  55                  60

Gln Glu Glu Lys Leu Lys Glu Met Ala Lys Arg Glu Gly Leu Trp Asn
65                  70                  75                  80

Leu Phe Val Pro Ser Phe Asp Gln Leu Phe Gly Glu Gly Leu Thr Asn
                85                  90                  95
```

```
Leu Glu Tyr Gly Tyr Leu Cys Glu Ile Met Gly Arg Ser Val Trp Ala
            100                 105                 110

Pro Gln Val Phe Asn Cys Gly Ala Pro Asp Thr Gly Asn Met Glu Val
        115                 120                 125

Ile Leu Arg Tyr Gly Asn Lys Glu Gln Ile Ser Glu Trp Leu Ile Pro
    130                 135                 140

Leu Leu Glu Gly Arg Ile Arg Ser Gly Phe Ala Met Thr Glu Pro Gln
145                 150                 155                 160

Val Ala Ser Ser Asp Ala Thr Asn Ile Glu Cys Ser Ile Arg Arg Gln
                165                 170                 175

Gly Asp Ser Tyr Val Ile Asn Gly Thr Lys Trp Trp Thr Ser Gly Ala
            180                 185                 190

Met Asp Pro Arg Cys Arg Val Leu Ile Leu Met Gly Lys Thr Asp Phe
        195                 200                 205

Asn Ala Pro Lys His Lys Gln Gln Ser Met Ile Leu Val Asp Met Arg
    210                 215                 220

Thr Pro Gly Ile Ser Val Lys Arg Pro Leu Thr Val Phe Gly Phe Asp
225                 230                 235                 240

Asp Ala Pro His Gly His Ala Glu Ile Ser Phe Glu Asn Val Val Val
                245                 250                 255

Pro Ala Lys Asn Ile Leu Leu Gly Glu Gly Arg Gly Phe Glu Ile Ala
            260                 265                 270

Gln Gly Arg Leu Gly Pro Gly Arg Leu His His Cys Met Arg Leu Ile
        275                 280                 285

Gly Ala Ala Glu Arg Gly Met Glu Leu Met Ala Gln Arg Ala Leu Ser
    290                 295                 300

Arg Lys Thr Phe Gly Lys Phe Ile Ala Gln His Gly Ser Phe Val Ser
305                 310                 315                 320

Asp Leu Ala Lys Leu Arg Val Glu Leu Glu Gly Thr Arg Leu Leu Val
                325                 330                 335

Leu Glu Ala Ala Asp His Leu Asp Lys Phe Gly Asn Lys Lys Ala Arg
            340                 345                 350

Gly Ile Leu Ala Met Ala Lys Val Ala Ala Pro Asn Met Ala Leu Lys
        355                 360                 365

Val Leu Asp Thr Ala Ile Gln Val His Gly Ala Ala Gly Val Ser Ser
    370                 375                 380

Asp Thr Val Leu Ala His Leu Trp Ala Thr Ala Arg Thr Leu Arg Ile
385                 390                 395                 400
```

Ala Asp Gly Pro Asp Glu Val His Leu Gly Thr Ile Gly Lys Leu Glu
405 410 415

Leu Gln Arg Ala Ser Lys Leu
420

<210> 101
<211> 147
<212> PRT
<213> Homo sapiens

<400> 101
Gly Lys Gly Phe Lys Tyr Ala Met Lys Glu Leu Asp Met Glu Arg Leu
1 5 10 15

Val Ile Ala Ala Gln Ala Leu Gly Ile Ala Gln Gly Ala Leu Asp Glu
20 25 30

Ala Ile Pro Tyr Ala Lys Gln Arg Lys Gln Phe Gly Lys Pro Leu Ala
35 40 45

His Phe Gln Leu Ile Gln Phe Lys Leu Ala Asp Met Ala Thr Lys Leu
50 55 60

Glu Ala Ala Arg Leu Leu Leu Tyr Arg Ala Ala Trp Leu Ala Asp Arg
65 70 75 80

Gly Arg Pro Thr Ser Lys Glu Ala Ala Met Ala Lys Leu Phe Ala Ser
85 90 95

Glu Ala Ala Met Gln Val Ala Asp Asp Ala Val Gln Ile Leu Gly Gly
100 105 110

Val Gly Tyr Thr Asn Asp Tyr Pro Val Glu Arg Phe Tyr Arg Asp Ala
115 120 125

Lys Ile Thr Gln Ile Tyr Glu Gly Thr Ser Glu Ile Gln Arg Leu Val
130 135 140

Ile Ala Arg
145

<210> 102
<211> 101
<212> PRT
<213> Homo sapiens

<400> 102
Ala Leu Thr Glu Pro Gly Ala Gly Ser Asp Val Gly Ser Ile Lys Thr
1 5 10 15

Thr Ala Glu Arg Lys Gly Asp Asp Tyr Ile Leu Asn Gly Ser Lys Met
20 25 30

Trp Ile Thr Asn Gly Gly Gln Ala Asp Trp Tyr Ile Val Leu Ala Val
35 40 45

Thr Asp Pro Ala Pro Gly Lys Lys Gly Ile Thr Ala Phe Leu Val Glu
50 55 60

Lys Asp Thr Pro Gly Phe His Ile Gly Lys Lys Glu Asp Lys Leu Gly
65 70 75 80

Leu Arg Ser Ser Asp Thr Cys Glu Leu Ile Phe Glu Asp Val Arg Val
85 90 95

Pro Glu Ser Asn Ile
100

<210> 103
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 103
gaggctctct ccagtaacat ca 22

<210> 104
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 104
actctccttg tcctctgagg cgctct 26

<210> 105
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 105
gcagtttggt tgtttggttt ac 22

<210> 106
<211> 22

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 106
catagccctg tctcaagtct tg 22

<210> 107
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 107
ttccatctct tcagcaaatc ctctca 26

<210> 108
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 108
actcttccga catcacaaga aa 22

<210> 109
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 109
tgagaatcag atccatgaag ct 22

<210> 110
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

Sequence

<400> 110
ccattagctg ctctgaacac ctttgg 26

<210> 111
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 111
gtcgctgacc accacatata gt 22

<210> 112
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 112
ccacttctaa agccacattg tc 22

<210> 113
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 113
tccacatctg gtcttgattt aatgtctga 29

<210> 114
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 114
cttctctttg tggggagatt tc 22

<210> 115
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 115
aaagaaggat accagggtga tg 22

<210> 116
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 116
atgattgaac cttcaggtcc aattca 26

<210> 117
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 117
ggtaccattt ccctttggta ca 22

<210> 118
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 118
ggaggctgaa ctggagaaaa 20

<210> 119
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 119
ccaccctgct tttgcaggaa aagtat 26

<210> 120
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 120
cttcaaggct ttgcaccata 20

<210> 121
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 121
tggagcagct cagaaaacat gt 22

<210> 122
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 122
agaatcggtg gtcctgtcct tcccc 25

<210> 123
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

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<210> 124
<211> 22
<212> DNA
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<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 124
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<210> 125
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<210> 127
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Sequence

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Sequence

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Sequence

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<220>
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<210> 132
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<220>

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<400> 132
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